



Educational Computing Platform

A Complete Proposal
for Shanghai American School



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1. Executive Summary

It has been the great pleasure of SolutionKeys, as Apple's authorised reseller, to work in co-operation with the Shanghai American School team over the past couple of years. Over the course of our relationship, we have come to understand better the needs and challenges of Shanghai American School, and the enclosed proposal is a result of our work together during this time.

The proposal includes the necessary hardware, software, service support, training and development needed to successfully implement a 21st century learning environment. The proposal also includes a robust infrastructure to support growth over the long term.

As an authorised Apple reseller, SolutionKeys will be providing value-added services throughout the entire program deployment in areas such as payment processing, order fulfillment, professional development, imaging, and an on-site engineer on each SAS campus.

Every Mac system includes a robust set of software for classroom use. The iLife '08 suite of media applications will empower students and teachers to express their ideas in new and engaging ways. And with Mac OS X on every system, they will almost never have to worry about viruses or system crashes. Everyone will be more productive.

Desktop users will have access to the iMac. With its all-in-one design, large and bright display, and built-in iSight camera, students will be able to run high-end media applications anywhere, see one another in video conferences, or just run their favorite learning tools. The iMac's flexibility and longevity will ensure it's a workhorse for Shanghai American School for years to come.

Of course, students will enjoy the benefits of a fully wireless, fully technology enabled learning environment. Not only because they're using the best technology, but because their teachers and administrators will invest in the development of the staff to accommodate their "digital native" learning preferences. While the changes won't happen overnight, the provisions made by Shanghai American School to ensure the success of its staff members will immediately benefit the most important users of the technology: the learners.

A financial proposal* (strictly for informational purpose only) is included for your consideration. It details the cost of each component of the proposal, and parts that are optional and/or flexible, such as professional development, on which Shanghai American School can spend as much or little as desired.

While we are virtually assured of hiccups and unforeseen challenges in the process of implementation, SolutionKeys, as Apple's authorised reseller, bring experience that will make the technology implementation process as smooth as possible. SolutionKeys is proud of its part in the process, and looks forward to your feedback on the enclosed proposal to build a world-class "digital school".

For any questions regarding this proposal, please contact:

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* Important: Please refer to section 3 for the terms on which this proposal is furnished.

2. Apple's Approach to Education

Apple's approach to ICT initiatives differs starkly from that of PC vendors. They start from the perspective of the learner and teacher, and build a program that centers around learning outcomes, rather than technology. The goal isn't simply to provide laptops. The goal is to improve the quality of learning.

Often, IT departments draw little distinction between IT environments for business and IT environments for learning. In reality, the needs of an academic community differ dramatically from those of corporations or businesses. Whereas business often speak in terms of "cost of ownership," schools should think in terms of "opportunity of ownership." What new opportunities are created for teaching and learning that would otherwise be unavailable? Rather than restrictive IT environments that limit network security risks, academic IT environments should facilitate ad hoc collaboration and communication. The list is long.

Thus, Apple's approach incorporates components that PC vendors don't often think about, let alone offer, including:

- **Vision consultation** to help a school clearly define the direction and motivation for its laptop program, helping avoid the pitfall of "technology for technology's sake";
- **Professional development for teachers** that helps them cope with the jarring change that occurs on the first day of "laptop enabled" class, and maximize the potential of each individual student;
- **Apple communities for teachers**, such as the *Apple Distinguished Educator* program, or the *Apple Learning Interchange* (<http://edcommunity.apple.com/ali/>), to provide external resources for the development of staff and improvement of teaching quality;
- **Learning infrastructure consultation** to help IT staff understand the unique needs of teachers and students in a laptop-enabled classroom;
- **Best practice consulting** for the design of acceptable use policies or the design of processes for managing thousands of computers;
- **Evaluation frameworks** for understanding the current state of the school and its staff, for developing plans to improve problem areas, and for measuring progress toward improvements in classroom instruction quality;
- **Integrated support** that enables students, teachers, administrators and IT staff to get help not only with hardware, but also software applications and creative approaches to the use of media software like iLife.

There has never been a more exciting time to be an educator, because there have never been so many creative ways to connect with students. When you bring movies, photography and music into the classroom, amazing things happen. Core subjects come to life; students are more inspired to communicate and collaborate; and without even realizing it, they get an enormous head start with 21st century skills. We believe that creativity is the key to unlocking every child's genius, and that media-rich learning is the key to greater creativity.

Everything we propose to Shanghai American School is rooted in years of experience building the world's most successful laptop programs, and ties into this vision of creative expression. That's what sets Apple's approach apart: it's all about learning.

3. Terms, Definitions and Declarations of Risk

The following section sets forth the terms upon which this proposal by SolutionKeys is based.

Mutual Confidentiality

All communications made between SolutionKeys and representatives of Shanghai American School (SAS) are to be made in confidence. Information disclosed by Shanghai American School to SolutionKeys will not be disclosed to third parties except Apple or otherwise in the process of attaining pricing and other critical information for the composition of this document. Any information disclosed by SolutionKeys to Shanghai American School will not be shared to any third parties.

None of the contents herein shall be shared with any third-party without the prior written approval of an authorized representative of SolutionKeys.

Informal Communication Process

Feasibility of the enclosed proposal depends on key assumptions that have been made as a result of conversations conducted between SolutionKeys and representatives of SAS. Such conversations have taken place in person, by telephone, by e-mail and other forms of communication, and as such, are not necessarily documented in written form.

SolutionKeys fully expects that discrepancies between the understanding of Shanghai American School and the understanding of SolutionKeys with respect to the expectations of Shanghai American School will occur. Such discrepancies may occur at any time; if such incident occurs before the conclusion of a final agreement, the proposal should be amended accordingly. Good faith negotiations will be assumed in the event of the discovery of a discrepancy in understanding after the proposal has been accepted by Shanghai American School.

Discrepancies and Errors

In the event that technical details in this document differ from publicly available information on Apple's products, the publicly available data shall take precedence.

In the event that errors are discovered in this document that inadvertently commit SolutionKeys to commercially non-viable services, SolutionKeys may be unable to comply with these erroneous commitments.

Terms and Conditions

Please note that the transactions stipulated herein will be finalized in a formal contract to be executed by SolutionKeys and the Shanghai American School at their absolute discretion, and the terms and conditions set forth therein shall be the binding terms. The terms contained herein form part of a proposal only and ARE FOR INFORMATIONAL PURPOSES ONLY. No offer is hereby made which is capable of acceptance. All future discussions regarding a final agreement shall be based upon SolutionKeys's standard

Terms and Conditions which will be provided to Shanghai American School in due course. No warranty is herein made as to the accuracy of any statements herein and any reliance of such information is done so at the Shanghai American School's own risk. All specifications listed herein are subject to change at SolutionKeys's absolute discretion and without notice. This proposal is furnished for Shanghai American School's information purposes only and no third parties may rely upon the terms herein for any purposes.

Important: Prices contained herein are for informational purposes only and are subject to change at SolutionKeys's absolute discretion and without notice. Prices will not become binding until a final agreement is signed between the parties.

4. Hardware and Software Solution Details

The hardware and software detailed in this proposal provide a technology solution that constitutes a powerful teaching and learning platform that could, by all accounts, be considered among the best in the world. Using the guidelines provided by Shanghai American School to structure the learning environment, we believe that this unique solution will be among the best available for the education of 21st century learners.

4.1 Common Technologies and Applications

Because Mac OS X is consistent among all Macintosh computers, this section provides a description of the technologies and tools that are included across all systems. Detailed hardware features are available in the section for each hardware solution at the School.

Core Technologies for Mac OS X

Mac OS X sports a raft of modern technologies that make the operating system exceedingly robust and reliable. The Mach kernel is what makes a Mac nearly crash free. Normally, no single application can ever bring the system down, and any application can be forced to quit, even when behaving poorly. As a result, while some applications may behave poorly, Mac OS X itself virtually never crashes.



Security and Virus Susceptibility

Mac OS X is one of the most secure operating systems available today, students, teachers and other users are protected from malware, spyware, and viruses by virtue of the underlying technologies in Mac OS X.



Spotlight

Mac OS X includes a systemwide data search feature that allows users to search instantly the contents of their entire hard drive. Spotlight not only searches the file names on the disk, but also searches inside every file, mail message, address book entry, system preference, and presentation to return the most relevant results for a search. The new Spotlight in Leopard even allows calculations of simple or sophisticated equations and dictionary definitions.



Spotlight also allows the creation of “Smart Folders.” Smart Folders let a user set a group of search criteria, and then create a “folder” from those results. The folder results are updated instantly and constantly. Whenever a user opens the folder, the contents match his or her search criteria.

EXAMPLE: A teacher searches his hard drive for “United Nations.” Within a few seconds, Spotlight returns a complete set of results showing all PDF and Word documents, Keynote and PowerPoint presentations, as well as mail messages that contain the phrase “United Nations.” If a PowerPoint presentation is titled “United Nations,” whereas a mail message simply contains the text in a single instance, the PowerPoint presentation is prioritized over the mail message. The system-wide search is completed in only a few seconds.

Dashboard

Dashboard allows users to quickly access information without disrupting their workflow. With a single keystroke, nifty widgets are instantly displayed. Hundreds of FREE education widgets are available today, such as the language translator, BBC Motion Gallery, and the Oxford Dictionary.



The Web Clipping function on Safari lets students and teachers capture any part of their favorite websites and keep them just a click away on their desktops. Say a teacher wants to begin every school day by reciting what happened on that date in history. The teacher simply “clips” the information from a website, and it’ll be there, on the dashboard, ready for them each day. The Web Clip updates automatically, just like the website it was clipped from.

EXAMPLE: A student is learning about the planets in the solar system. She downloads the “Mars Rover” widget from NASA, and is instantly able to see images from Mars as downloaded from the Mars Rover vehicle. Whenever she wants to flip through these images, and see the location of the rover now, she can touch F12 and see the latest data. During class, her teacher asks if anyone knows the distance to Mars from Earth. The student again touches F12 and uses the Wikipedia widget to instantly search for this figure in the online encyclopedia.

Time Machine

Most users never back up their systems. This creates headaches for everyone when a data loss occurs. The user is upset, and the IT department is expected to solve the problem. Enter Time Machine. Time Machine automatically backs up your system hourly, keeping 24 hours of hourly backups, one week of daily backups and monthly backups until your backup disk is full. Users can “go back in time” through a powerfully simple user interface to restore photos, e-mail messages or files from a running history of their computer. Time Machine solves the problem of “lazy users” by automatically keeping backups and making the data accessible—even through Spotlight.



iChat AV

Mac OS X includes advanced text, audio and video conferencing software. iChat AV is integrated into the operating system, making the use of these technologies simple and powerful. iChat AV integrates with standard instant messaging protocols including AOL Instant Messenger, Jabber for local messaging, Jabber for Google Talk and Bonjour for ad hoc, instant messaging with nearby computers.



Because iChat AV integrates with the hardware it runs on, it is automatically capable of using the iSight cameras built into all of Apple's MacBooks and iMacs. This integration enables students, teachers and other Mac users to instantly initiate a one-to-one video conference, or add as many as four people to a video conference, with no configuration. Group audio conferences of up to 10 people are also supported. iChat AV also allows screen sharing for project collaboration and chat recording whether it be an audio or video chat.

To protect students, access can be limited to those within a school's domain, and communications are encrypted. That means students can chat using text, audio, or video—and share their files and URLs—all without the risks of traditional IM services. With Jabber, they can also chat across multiple platforms. Chat transcripts can even be saved for later reference. iChat can be connected to a local iChat server running on Mac OS X Server, effectively ensuring the security and privacy of information shared by students while at school—and even at home.

Mail

Mac OS X includes an integrated e-mail client which connects to any standard mail server using standard protocols. At Shanghai American School, Mail will connect to your Exchange e-mail system through POP3 or IMAP, and can also be configured to connect to external e-mail accounts.



Safari

Safari is a fully featured web browser and RSS reader. It's one of the fastest web browsers available today. Safari will also simplify the process of installing widgets, subscribing to podcasts and other day-to-day tasks.



iCal

All systems include iCal, Apple's powerful calendaring application. A clean user interface, intuitive scheduling features, and integrated invitation functionality make keeping schedules easy.



Because iCal supports the standard ICAL file format, it can also be used with non-Apple platforms. iCal also enables users to automatically publish their calendars to the web. Users can subscribe to other people's or organizations' calendars so that they appear in the users iCal application directly, making it easy to share events with teachers and students.

EXAMPLE: Teachers can publish their class calendar, including major tests or exams, homework due dates, projects and other class events to their iCal calendar. The calendar is then shared via the local iCal server to students in the class, whose calendars will automatically update to show the latest information. Sports teams publish their practices and matches; the drama club publishes its rehearsals and performances. The school is synchronized on a common, cross-platform calendar for students and teachers.

Podcast Capture

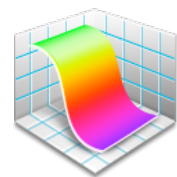
Mac OS X includes a tool that enables students and teachers to publish podcasts to a podcast server with just a few simple steps. Podcast Capture is included with every Mac, enabling users to capture video, audio or screen-capture podcasts and publish them directly to the web. The tool provides access to server-side workflows that can add opening trailers, ending trailers, watermarks, titles, tagging and other services to podcasts, including the production of various versions for iPod, web, and even high definition televisions.



Podcast producer sets the Mac apart by making the production and sharing of podcasts simple and reliable, which is key for teachers who may otherwise struggle with the steps involved in manually publishing podcasts.

Grapher

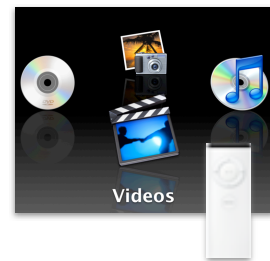
Mac OS X includes a powerful 2-D and 3-D graphing calculator. Grapher enables students and teachers to plot complex equations using standard mathematical notations in the polar and Cartesian coordinate systems, lin-log format, polar log format and much more. Designed to be a comprehensive graphing application, Grapher also integrates with QuickTime to produce animated movies of 2-D and 3-D graphs, objects and other media files. Grapher also solves integrals, differential equations, and other common calculus functions. It is sufficient to replace most, if not all, physical graphing calculator functionality.



EXAMPLE: A math teacher is leading a class activity that requires students to compose 3-D graphs based on a set of pre-determined multivariate equations. Students must first solve for a set of values, and then plot the 3-D chart using Mac OS X's built-in graphing calculator, Grapher. One student manages to plot a set of very interesting graphs, and the teacher wants to share his graphs with the other students. She double clicks his screen in Remote Desktop on the presentation computer, and it is instantly displayed on the projector for everyone to see. The teacher then saves the graph to a file, and pushes a copy to everyone's desktop. Now, every student can double click this file and interact with the graph locally.

Front Row

Every MacBook includes Front Row software and an Apple Remote. Front Row enables students to present their photographs, movies, podcasts and other media using a remote control, and with a single click, from up to 30 feet away from their MacBooks. Its easy to use interface, combined with its tight integration with Apple's iLife suite, makes it one of the most powerful tools for viewing and presenting media today.



iTunes

iTunes has powerful capabilities for music and audio management, the ability to legally share music with other users, the ability to subscribe to podcasts even if users don't have an iTunes music store account (currently unavailable in selected countries), and much more. iTunes is also capable of playing videos and movies, including video podcasts, which can be shared with other students using iWeb. iTunes is also responsible for synchronizing iPods with both Macs and PCs. iPod users can plug their devices into their computers and download the latest versions of podcasts from teachers, fellow students or other learning resources, and watch or listen to the podcasts on their iPods while on the bus, train or in the car. Tens of thousands of podcasts are now available for educators to use in almost every subject area and at every grade level.



Windows Compatibility

Mac OS X includes multiple features for Windows compatibility including connectivity, file format support, printer compatibility, VPN compatibility and Active Directory support. Mac OS X systems are capable of directly connecting to any Windows file share without any extra configuration.

At Shanghai American School, Macs will be able to connect to any core service currently deployed on Windows servers including file sharing, core network services (DHCP, DNS, etc.), proxies, and other commonly used services without third-party software or unsupported configuration.

Printer and other Device Compatibility

Mac OS X is a true “plug and play” operating system. Major printer brands will work immediately upon being connected to the USB port on any Mac. The same holds for almost all digital cameras, video cameras, scanners, etc.

Furthermore, many major printer brands (including HP, Lexmark, Brother, Canon, Xerox and more) have adopted Bonjour technology, making their addition and configuration within a Mac OS X printer list entirely straightforward. Simply choose a printer from the list of printers that are on the network, and Mac OS X automatically locates the printer on the network, configures the appropriate drivers, and adds the printer to your printer list.

4.2 Built-in Applications

iLife '08

iLife '08 is a suite of integrated applications for creating, sharing, managing and publishing all major media types. iLife is designed to enable students to express their thoughts in new and creative ways, beyond simply speaking and writing. While these skills are more important today than ever, a well-rounded learner must be able to communicate using a 21st century vernacular. iLife provides the communication tools; students and teachers provide the creativity.



iLife includes five applications:

- **iPhoto** for photographs and images,
- **iMovie HD** for editing and sharing standard and high definition video,
- **iDVD** for creating and burning professional quality DVDs,
- **iWeb** for publishing content to the web, and
- **GarageBand** for creating music and podcasts.

Both individual licenses and site licenses are available to Shanghai American School.

iPhoto '08

Students can organize photos they take or artwork they create easily because iPhoto automatically organizes library by Events, based on dates. iPhoto is also used to manage other still media, such as language learning flash cards. Powerful new editing tools let students edit like a pro and paste a set of adjustments from one photo onto another. Students can also showcase their projects with custom books, slideshows and calendars.



iMovie '08

With iMovie, students can easily create movie projects that include digital video, photos, and music, as well as narration and text. Students can use iMovie to create video science reports, their own short films, or documentaries about current events. Also, iMovie offers a variety of ways to share movies with friends, family and faculty. Movies can be sent to iTunes, .Mac Web Gallery or even YouTube directly from iMovie. Students can easily share best classroom practices with peers.



GarageBand '08

With GarageBand , students can perform, record, and create their own music and other audio. They can easily create original music by combining a series of pre-recorded musical performance and can even print basic notation of the music they create. For teachers, they can use GarageBand to teach students how to compose music, compare various music effects, learn musical notation, and create accompaniments for their music recordings.



iWeb '08

iWeb makes it easy for students to make beautiful websites with dynamic content. Also, it lets students organize their photo albums and Movies onto one attractive page. Students can instantly publish their websites on the Internet with a MobileMe account, or to any web server. Students can use websites produced with iWeb to showcase their documentary films, to display their artwork, or to report on school events. Teachers can use iWeb websites to share class projects with students' families and with the school community. Best of all, iWeb integrates seamlessly with the other applications in iLife, making the addition of images, music and videos incredibly easy.



iDVD '08

With iDVD, students can readily produce impressive DVDs to store and share their digital projects, document their learning, or present a class movie, complete with menus and chapters. And because DVD discs hold so much information, teachers can store several digital media projects on one DVD.



4.3 Optional Applications

iWork '08

A powerful word processor, layout application and design tool, Pages enables learners young and old to express themselves in new ways. Keynote enables users to present their thoughts in new ways with powerful graphics, charts and designs. Numbers offers a new approach to spreadsheets that allows people to organize information, interact with data. Together, these three applications make up iWork, Apple's productivity suite. Both individual license and site license are available to Shanghai American School.

Pages

A powerful word processor and layout application, Pages '08 enables students to create professional documents without the complexity of professional page layout applications. It also enables teachers and administrators to create documents that effectively communicate ideas in clean designs. And because Pages is integrated with Mac OS X, users have immediate access to the photos and other media available to them from their iLife suite. Pages is able to open and save to Microsoft Word documents.



Pages is especially good for project management, for example when student is writing a document with multiple reviewers, the change tracking in Pages '08 will keep edits in order. Track change will detect any changes in the document like body flow and text objects. It is easy to work with multiple authors on a single document.

Keynote

Presentation software need not be boring; students can learn a new way of communicating with Keynote. Keynote enables the communicator to take advantage of the powerful graphics and processing technologies built into Mac OS X.



Keynote lets students to tell their story with motion. Precisely control how an object moves across the screen. So that students can bring slides to life easily. Also, keynotes allows teachers to record a voiceover to their slides, meaning teachers can deliver a lesson beyond the normal classroom hours, allowing

students to easily and continuously learn. Keynote is able to open and save to Microsoft PowerPoint files.

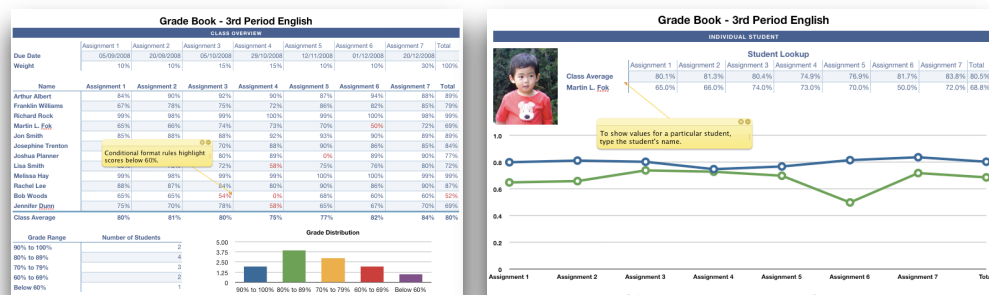
Numbers

With Numbers, it's easy to combine data and calculations, charts, and even images to create compelling spreadsheets. Students can create beautiful 2D and 3D charts. Easily add iLife media. Even draw shapes.



Numbers includes a range of attractive templates that feature beautiful text and graphics for education and personal use. Students will enjoy using templates for lab reports, event plan or organizing information about a club. Keynote is able to open and save to Microsoft Excel files.

While Numbers is fantastic for students, it also includes easy-to-use templates for teachers and staff members for managing their own day-to-day work.



For more information on how Apple Remote Desktop can change the way teachers work in laptop classrooms, please visit www.apple.com/remotedesktop.

Microsoft Office for Mac

If Shanghai American School would like to maximize cross-platform compatibility with PCs, then SolutionKeys recommends the inclusion of Microsoft Office for Mac, Student and Teacher Edition, with every system. This software suite includes:



- **Microsoft Word**
- **Microsoft Excel**
- **Microsoft PowerPoint**
- **Microsoft Entourage**

All are compatible with their Windows counterparts. Microsoft Office for Mac **runs natively on Mac OS X** and does not require Windows or any additional compatibility software. It is written by Microsoft directly for Mac OS X. All files and documents created on Microsoft Office for Mac are compatible with files on the PC, and vice versa.

Although SolutionKeys believes that Mail and iCal are a more appropriate solution for students, in the case that Shanghai American School decides to run Microsoft Exchange server, SolutionKeys recommends Microsoft Entourage for those users who require workgroup calendaring and e-mail services. Microsoft Entourage is fully supported by Microsoft for connections to Microsoft Exchange server.

Optional Windows Compatibility Software

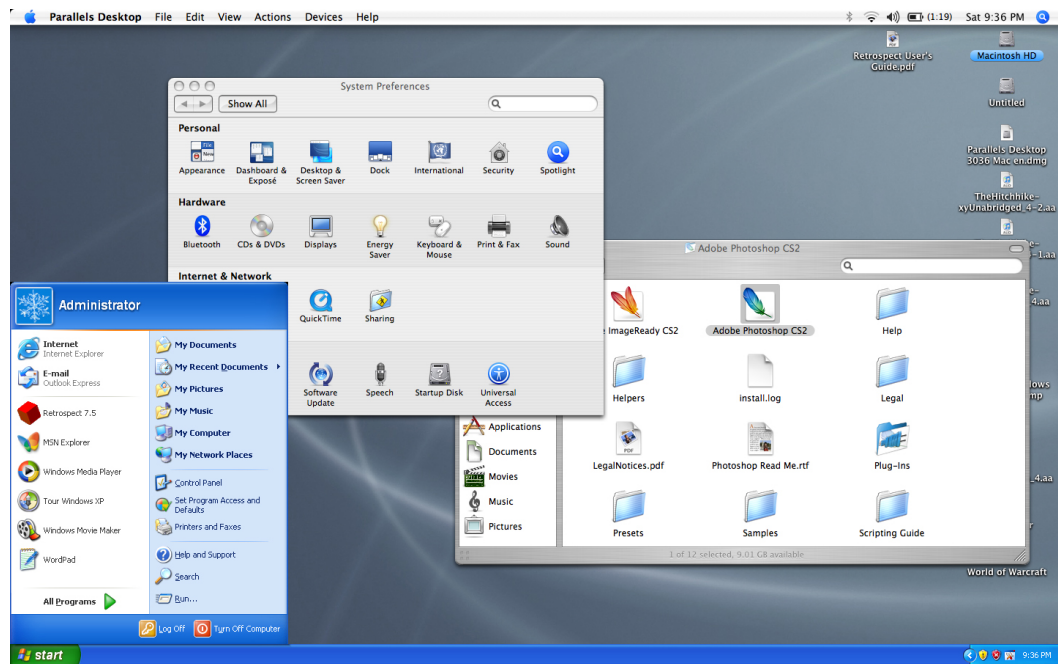
While we do not recommend the mandatory distribution of such software, there may be instances, particularly for administrators, where some Windows-only finance or student information management applications would require the Windows operating system. With Intel Core 2 Duo processors, any Macintosh system can run Windows natively and seamlessly, supporting virtually any application written for Windows or Mac. There are two primary methods of running Windows on the Mac.

Parallels Desktop and Fusion from VMWare

Parallels Desktop and Fusion are third-party applications that enables the Mac to simultaneously run Windows and Mac OS X on a single system using virtualization. The application is fully supported by their developers, and has been shown to effectively enable the simultaneous use of both platforms.

These virtualization software has the ability to run in "Coherence Mode" which enables Windows windows to appear directly within the Mac OS X environment. Thus, the one

application that may need to be run in Windows can be run without otherwise impacting the ability of the user to operate primarily in the Mac OS X environment. In the screen capture below (with Parallels as example), the Apple menu at the top is available, along with the Macintosh desktop. However, the Windows start menu is available at the bottom within the Apple environment. Windows and Macintosh applications can be launched side-by-side.



While both software offer a convenient way to solve potential technical problems, it is not recommended that this software be widely distributed to students. It poses technical challenges to the average user, and will create more headaches than solutions. We recommend it be used only in cases where it's needed. Particularly in the classroom setting, students will benefit most from the laptop program when the vast majority are on the same platform: Mac OS X. Individual license and site license for both Parallels Desktop and VMWare are available through respective resellers.

Windows Licenses

None of these solutions include Windows licenses, which must be purchased separately by the school or end user.

Anti-virus Software

We are happy to offer Shanghai American School anti-virus software for its systems. However, Mac OS X does not currently suffer from a substantial risk of viruses and malware, and recommends against a network security policy that enforces the use of such software.

The use of anti-virus software presents the following complications:

- Tendency to confuse users with error messages and warnings, leading to unwanted inhibitions on the part of inexperienced users;
- Tendency to interfere with the use of network and external media, such as USB sticks and CDs;
- Tendency to reduce overall system performance by constantly monitoring network and disk activity for unwanted software;
- Tendency to conflict with the installation process of software applications;
- Tendency to conflict with new versions of existing software;
- Tendency to conflict with new versions of the operating system;
- Added cost of the software for each system;
- Inability to guarantee protection from viruses and malware.





We believe that the use of anti-virus software is critical in the back-end components of the infrastructure, such as file servers and mail servers, as these complications can be managed by the professional staff of the IT group.

We believe that the use of anti-virus software on client systems—particularly portable systems used on a day-to-day basis by individuals—is ill advised. The limited vulnerability of Mac OS X to such software means that the complications listed above significantly outweigh the benefits of using anti-virus software on every system.

Note that the Windows operating system, when run on Mac hardware, does not receive any benefit from being on a Mac. Macintosh systems running the Windows operating system should have protective software installed for the Windows operating system. The Macintosh operating system, however, will not suffer vulnerability from having Windows running or installed.

4.4 Recommended Laptops

Based on the specification guideline listed in Shanghai American School's RFP, SolutionKeys believe that the following models and configurations provide the ideal balance of power, affordability, portability, and design for students and teachers at Shanghai American School. All suggested models can be further customized to fit individual teaching and learning needs.

Lightweight	Basic	Balanced	High-Performance
			
MacBook Air	MacBook (Good)	MacBook (Better)	MacBook Pro
1.6 GHz Intel Core 2 Duo	2.1 GHz Intel Core 2 Duo	2.4 GHz Intel Core 2 Duo	2.4 GHz Intel Core 2 Duo (or above)
2 GB of RAM	1 GB Supports up to 4 GB	2 GB Supports up to 4 GB	2 GB Supports up to 4 GB
80 GB hard drive	120 GB	160 GB	200 GB
13.3 inches, 1280 X 800 wide screen	13.3 inches, 1280 X 800 wide screen	13.3 inches, 1280 X 800 wide screen	15.4 inches, 1440 X 900 wide screen
802.11n wireless, Optional USB Ethernet Adapter	802.11n, Gigabit Ethernet, Bluetooth 2.1	802.11n, Gigabit Ethernet, Bluetooth 2.1	802.11n, Gigabit Ethernet, Bluetooth 2.1,
Optional external SuperDrive (DVD±R DL/ DVD±RW/CD-RW)	Combo Drive (DVD-ROM/CD-RW)	8x SuperDrive (DVD±R DL/ DVD±RW/ CD-RW)	8x SuperDrive (DVD±R DL/ DVD±RW/ CD-RW)
Built-in iSight Camera and Microphone	Built-in iSight Camera and Microphone	Built-in iSight Camera and Microphone	Built-in iSight Camera and Microphone

** For full product line and detailed specifications please refer to the attached appendix. Specifications are subject to change without notice.*

Recommended Usage

MacBook Air

MacBook Air, is the thinnest notebook in the world today. It is designed to take full advantage of the wireless environment. Because of its ultra-portability, we recommend this lightweight model for general administration, presentation, and school staff on-the-go.

MacBook (Good) and MacBook (Better)

For a one-to-one laptop school, the emphasis is of course on the portable system that students and teachers will take with them to school each day. The MacBook is designed

from the ground up with this in mind. Its durable design, coupled with its powerful processing capabilities, make it just right for demanding classroom environments. We recommend the “Good” model for mobile learning lab solutions in the primary level, while both models can be considered for 1:1 student purchase. With the larger hard drive capacity and DVD-RW function, the “Better” model is the ideal model for teachers. Because the MacBook is so durable and serviceable, we recommend it be used for students, rather than MacBook Air, in most cases.

MacBook Pro

The new MacBook Pro has the performance, power, and connectivity of a desktop




Teaching with iPod: For teaching ideas, see how teachers are using iPod to engage students and extend learning beyond the classroom.

<http://edcommunity.apple.com/ali/collection.php?collection=7>

computer packed into a laptop. Its sharp, high resolution screen makes it the ideal laptop for digital media teachers and students.

4.5 Recommended Desktops

Because Shanghai American School incorporates a one-to-one laptop solution for teachers and students, desktop systems must provide value beyond the laptop computers that they will already be carrying. As such, we propose the following models and configurations based on the specification guidelines. All suggested models can be further customized to fit individual teaching and learning needs.

General Use	Digital Media	Professional Studio
		
iMac 20" (Good)	iMac 20" (Better)	Mac Pro
2.4 GHz Intel Core 2 Duo	2.8 GHz Intel Core 2 Duo	Two 2.8GHz Quad-Core Intel Xeon (8-core)
1 GB RAM (DDR2 800MHz), supporting up to 4GB	2GB RAM (DDR2 800MHz), supporting up to 4GB	2GB RAM (DDR2 800MHz ECC fully buffered DIMM)
250 GB SATA, 7200rpm	320GB SATA, 7200rpm	320GB SATA, 7200rpm
1066MHz front-side bus	1066MHz	1600MHz

6 MB shared cache on the processor	6 MB shared cache on the processor	12 MB (each pair of cores shares 6 MB)
3 USB ports on computer, 2 USB ports on keyboard, 1 FireWire 400, 1 FireWire 800	3 USB ports on computer, 2 USB ports on keyboard, 1 FireWire 400, 1 FireWire 800	5 USB ports on computer 2 USB ports on keyboard 2 FireWire 400; 2 FireWire 800 3 PCIe expansion slots
Gigabit Ethernet, 802.11n, Bluetooth 2.1	Gigabit Ethernet, 802.11n, Bluetooth 2.1	2 Gigabit Ethernet, optional 802.11n and Bluetooth 2.1
8 × SuperDrive (DVD±R DL/ DVD±RW/CD-RW)	8 × SuperDrive (DVD±R DL/ DVD±RW/CD-RW)	8 × SuperDrive (DVD±R DL/ DVD±RW/CD-RW)
ATI Radeon HD 2400 XT with 128MB GDDR3 memory	ATI Radeon HD 2600 PRO with 256MB GDDR3 memory	ATI Radeon HD 2600 XT with 256MB GDDR3 memory
20 inches all-in-one form factor	20 inches all-in-one form factor	Tower with 20 inch Cinema Display (sold separately)

** For full product line and detailed specifications please refer to the attached appendix. Specifications are subject to change without notice.*

Recommended Usage

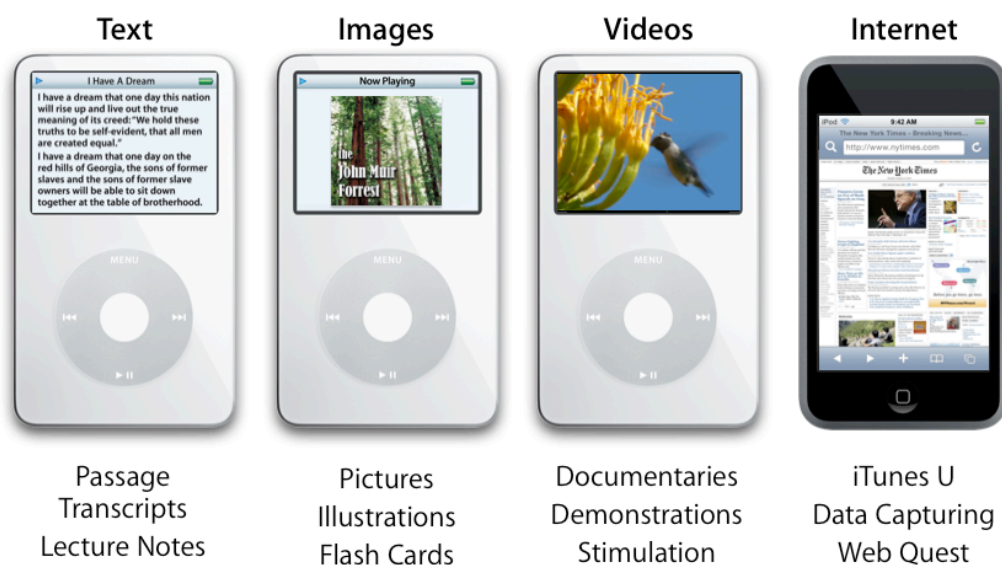
With a much larger display screen and hard drive, the iMac is the ideal desktop system for classroom and laboratory use from its space-saving all-in-one design to its space-age capabilities. The “Good” model is geared for the digital classroom and offers the ultimate value for today’s learners, while the “Better” model is ideal for digital media labs such as music, graphics, and film. The Mac Pro contains top-of-the-line eight core processing power, and delivers ultimate performance for professional labs such as theatre tech, campus TV, and recording studios.

4.6 Podcasting Solution

The iPod enables teachers to bring digital media to the learning process in virtually every subject. The goal of the digital school is to bring learning into the natural “digital” environment that students live in every day. What better way to meet them on their own turf than by using the iPod? The following examples are designed to illustrate a few of the many ways iPod can be used to support learning.

Language Learning

In many language learning programs, students are tethered to computers in order to listen to recordings of their target language. They’re unable to quickly flip back and forth between lessons. And their study often requires specific software tools that require them to be in a specially equipped learning lab.



With the iPod, students can subscribe to their class podcast and automatically receive text, images and audio to supplement their studies. Chinese language learners, for example, can view images of characters on the iPod, listen to the character being read and even see the characters with and without pin yin and translations.

The possibilities are endless for the iPod as part of a language learning program. Dialogs that need to be memorized can be distributed to every student. Flash cards of objects that need to be named can be viewed on-screen. And videos, rather than just audio clips, can be easily integrated into the curriculum:

Humanities

What better way to illustrate history than through the excitement of rich media? Students will have the opportunity to view videos, listen to audiobooks, recordings of "first hand accounts" from historical and fictional figures, or listen to music from the period being studied.

Students can listen to audio books on selected topics, or subscribe to podcasts created by the teacher or the podcasting community to supplement their classroom learning.

Music Studies

Music curricula are enhanced by the iPod in countless ways. Students exploring various genres of music as part of their studies will benefit from having access to the music on the go. They'll make better use of their time on the bus, or while at home. Perhaps most importantly, students will be able to trade musical creations with one another and mix them with their own music selections. Nothing enhances the quality of a student's work than having an authentic audience for his or her creations.

Other Applications

Audio books: Thousands of royalty-free audio books provide access to the classics and thousands of commercially available titles. (A single download can be legally synchronized to any number of iPods simultaneously.)

Photocasts: Whether for sciences, maths, or art, iPod can subscribe to a stream of photos that will be automatically synchronized with iPods for remote viewing. (Imagine a field trip for aspiring botanists that enables them to identify and classify plant types using the key on their iPods. It's better than lugging a textbook around all day!)

Lecture review: Many applications, including GarageBand, allow teachers to easily package up their classroom lectures into video and audio streams that students can use to review before tests and exams.

Podcast Producer

Podcast Producer provides a complete, end-to-end solution for encoding, publishing, and distributing high-quality podcasts across campus. Ideal for lectures, presentations — or whatever audio or video podcasts SAS requires — Podcast Producer simplifies the process of recording content, encoding, and publishing podcasts for playback in iTunes and on iPods. Teachers and Students can now upload their work with just one click—without know how to reformat for the web or where exactly should it be placed in the directory.



A podcast starts with the new Podcast Capture application in Leopard. This innovative tool makes it easy for users to capture high-quality audio and video from local and remote cameras, record screen captures, and upload existing content into Podcast Producer for encoding and distribution. Podcast Capture records audio and video from a wide range of devices, including digital video cameras connected via FireWire, USB microphones, and iSight cameras.

Podcast Producer includes a dozen built-in workflows to automate publishing of podcasts to designated blogs, wiki, or even multimedia-enabled cell phones over high-speed wireless networks using QuickTime Streaming Server. Workflows include the ability to archive recordings, apply custom titles and watermarks, add opening and closing videos, notify fellow students and teachers of new episodes, and send out an announcement email.

4.8 Complementary Curriculum Products (General Education)

Apple has rich partnerships with all major educational software publishers. Through these partnerships, Apple has ensured the quality and compatibility of educational software titles running on Mac OS X and the recommended MacBook configuration. A list of recommended curriculum solutions categorized by subject areas is attached in the Appendix section of this proposal for the school's reference.

- Creative Expression
- Language Learning
- Math
- Science

Shanghai American School should work directly with the software vendor or their local China resellers to acquire these tools. SolutionKeys will be happy to provide relevant information to facilitate the procurement process.

4.9 Music Lab Solution

Apple is the leading provider of music production solutions to professional musicians and producers worldwide. Apple's solutions build on Logic, Soundtrack and more. And with a laptop in their hands and state-of-the-art professional recording studio equipment at their disposal, each student will now have access to his own mobile workstation to capture those anytime, anywhere inspirations, then seamlessly take his work back to the lab for fine tuning.

Beginner: GarageBand

As part of the iLife suite, beginners can be up and running and creating their own music in a matter of minutes with over 50 professional-sounding instruments. Students may also "sketch" and record their ideas on their laptop before using lab time.

<http://www.apple.com/ilife/garageband/>



Intermediate User: Logic Express

Logic Express provides a step up from GarageBand for aspiring musicians, producers and composers with a solution that is more affordable than Logic Pro. With the same flexible layout as Logic Pro, you can dive deeper into the creation and manipulation of audio and MIDI.

<http://www.apple.com/logicexpress/>



Advanced User: Logic Pro

The industry-leading application for music and audio production, Logic Pro is a complete music workstation studio students can use for recording, arranging, mixing, and producing music projects.

<http://www.apple.com/logicpro/>



Soundtrack Pro

Soundtrack Pro provides award winning audio editing capabilities, sound design, and restoration, along with thousands of royalty-free sound effects and music loops, as well as plugins.

<http://www.apple.com/finalcutstudio/soundtrackpro/>

**GarageBand Jam Packs**

The perfect accompaniment to GarageBand, it provides collections of additional Apple Loops, playable software instruments, and effects presets.

<http://www.apple.com/ilife/garageband/jampacks/>



Music Lab Workflow

Songwriter

Composition Scoring

Logic Pro's Score editor perfectly transforms MIDI performances into notation — in real time — as you're playing.

Recording

When students are ready to record, Logic Pro 7 turns the Macintosh into a professional digital audio workstation that meets the highest demands for audio quality. It supports audio at 16- and 24-bit resolution and sample rates of up to 192kHz for both audio recording and playback of internal software instruments.

Recording Engineer

Fine-Tuning Audio Samples

After you've recorded the material with Logic Pro 7, it incorporates a powerful sample editor, allowing precise editing of your audio data. Beyond simple operations such as cut, copy, and paste, an extensive suite of Digital Signal Processing (DSP) tools is also available. These tools include time stretching, pitch shifting, and format correction. Within the sample editor, you can quantize your audio recordings, translate pitched monophonic audio recordings into notation, or extract the rhythm of an audio drum loop for use as a quantization template on MIDI performances.

Mixing

The virtual mixer in Logic Pro 7 controls a maximum of 255 audio tracks, 128 audio instrument tracks, and a nearly unlimited number of MIDI tracks. Each audio and audio instrument track can display and use up to 15 insert plug-ins and 8 effect bus sends. Logic Pro offers dozens of effect plug-ins and supports additional Audio Unit (AU) format plug-ins.

Outputting

You can write your final mixes to disk using industry-standard formats such as SDII, WAV, AIFF, AAC, and MP3, including ID 3 tags. Logic Pro 7 also supports 12 surround formats for creation of film and TV soundtracks. You can even bounce your song to a stereo audio file and immediately burn it to CD or create a CD master.

Podcaster

Get students' music in front of one of the largest audiences in the world with podcasts. Once your recordings are complete, post them onto one of the many podcast sites available, including the iTunes Music Store Podcast area.

Sound Designer

Fixing Audio Problems

Soundtrack Pro enables you to quickly identify, preview, and fix common audio problems such as background noise, pops, clicks, and hum. You are also able to stretch the audio without affecting pitch.

Sound Design

More than 50 professional effect plug-ins from Logic Pro is available to enhance a dialog track; recreate the reverberant ambience of any space; create sound effects or design new music sounds and samples. Select the perfect audio bed for your project from more than 5000 sound effects and music files using the intuitive Apple Loops browser.

4.10 Film & Video Lab Solution

Apple technology is the platform of choice for the film, video, and broadcast production industries. Film and video production once required dozens of professionals and thousands of dollars are now accessible to students and educators. With a Laptop on their hand and a state-of-the-art professional film production studio, each student will have now have access to their own mobile workstation to capture and those anytime anywhere inspiration, then seamlessly take their work back to the lab for memory intensive editing and post-production.

Beginner: iMovie

iMovie '08 makes viewing and working with video as intuitive as enjoying your photos. With its revolutionary interface, iMovie makes it quick and easy to browse your library and create new movies. And iMovie is built for sharing. In just a few steps, you can add movies to your website, publish them on YouTube, and create versions for iPod, iPhone, and Apple TV.

<http://www.apple.com/ilife/imovie/>



Intermediate User: Final Cut Express HD

When students are ready to test their moviemaking mettle with more advanced video editing projects, and Final Cut Express HD can take you there. With support for multiple video layers, real-time special effects and transitions, and powerful tools like color correction and matting, Final Cut Express HD lets you achieve truly professional-looking results. Every Final Cut Express license comes with **Sound Track** and **Live Type** for scoring and titling.

www.apple.com/finalcutexpress



Advanced User (Desktop Workstation): Final Cut Pro

Final Cut Studio 2 helps take you beyond mere editing. Students can rapidly move through editing to motion graphics, audio editing and mixing, color grading, and delivery. Final Cut Studio 2 includes:

Final Cut Pro 6, a powerful and precise editing application that works with virtually any video format.

Soundtrack Pro 2, the must have tool for sound designers.

Motion 3, for creating and editing advanced motion graphics with drag and drop ease.

Compressor 3, to output files efficiently while keeping quality high.

DVD Studio Pro 4, an advanced tool for creating professional quality DVDs.

Color, a new application for professional color grading.

<http://www.apple.com/finalcutstudio/>



Shake 4.1

To complement Final Cut Studio, Shake's advanced digital compositing tools help create convincing, photorealistic, Hollywood-caliber visual effects.

<http://www.apple.com/shake/>



Film and Video Lab Workflow

Each application in Final Cut Studio works together to create an intuitive comprehensive workflow of its own. Consistent elements like the timeline, keyboard commands, and file formats make it easy to learn the applications and move quickly from one to the other to create high-impact video, motion graphics, titles, original audio, and DVDs.

Pre-production

Once a story is polished, students can present the story board with keynote, iphoto solid show, or an iMovie sketch reel. Working alone or in collaboration, students can also produce a project plan to include budget, talents, and filming dates.

Production

Using your storyboards as visual guides to carefully plan each shot, you make critical decisions about composition, lighting, and sound with Final Cut Pro 5. You can immediately capture your footage to your Macintosh and do real-time editing for DV, SD, HD, HDV, and Film. Multi-camera editing will allow you simultaneous playback of multiple camera sources for on-the-fly editing. Combining these features with multichannel audio input and support for audio control surfaces, editing can be done whenever and wherever time is available.

Post-production

With Motion 2, the world's first 32-bit, GPU accelerated motion graphics software, students can design and visualize in real time. Because sound is half the picture, Soundtrack Pro's precision audio editing and powerful sound design tools will allow you to create the perfect score for your video or DVD project.

Real-time editing

Final Cut Pro 5 includes powerful new features such as Native HDV editing, multi-camera editing, Dynamic RT, multichannel audio input, audio control surface support, and workgroup editing with Xsan which will improve workflow and maximize efficiency for labs.

Real-time motion graphics design

Motion 2 is the world's first motion graphics software with GPU accelerated 32-bit float rendering for true film quality. With Behaviors, the new Replicator tool, and FxPlug, the designs you create with Motion 2 are unlike what you'll create anywhere else.

Advanced audio editing and sound design

Compose royalty-free, hassle-free music with Soundtrack Pro, the simplest way for film and video professionals to do full multitrack editing and mixing.

Distribution

With your post-production effort complete, DVD is the perfect way to distribute your professional projects and demo reels.

5. Infrastructure Technologies

SolutionKeys proposes a back-end infrastructure that supports a rich array of learning services for the school. In the case that the school wishes to incorporate specific administrative or learning functions in other platforms, the proposed set-up is designed to be an open platform that can integrate with Macs, Linux, and Windows.

Many schools have an existing infrastructure which face limitations in meeting their teaching and learning objectives along with long-term sustainability challenges. The following recommendations will allow Shanghai American School to provide a wealth of technology services to support the current and future demands of 21st century learning.

5.1 Fundamental Architectural Change

Many educational institutions have a network environment adopted from the business world. It provides a basic set of services such as email, file sharing and printing along with hosting special applications for the management of the school's business.

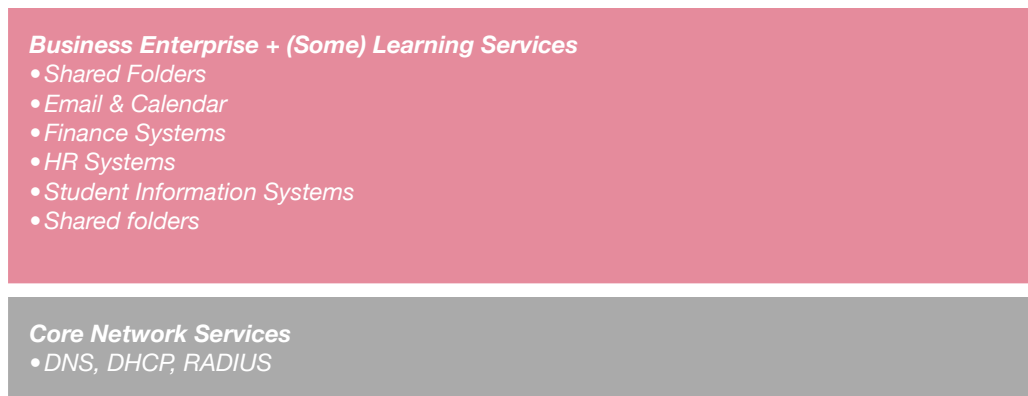
At a minimum, (almost) every institution requires a basic set of services such as email. The following shows why, from a user standpoint, there is difficulty adapting business systems to the needs of the learner.

Diagram A: Business vs. Learning Environment

Knowledge Worker Business/Administrative Infrastructure	Digital Native Learning Infrastructure
Monetary or Revenue Driven	Knowledge Creation and Dissemination
Cost Reduction (Productivity)	Creative Exploration
Highly Restrictive	Highly Collaborative, Interactive and Ad-Hoc
Software Solutions are Functional	Software Solutions are Expressive
Network Centric	User/Student Centric
Total Cost of Ownership	Total Opportunity of Ownership

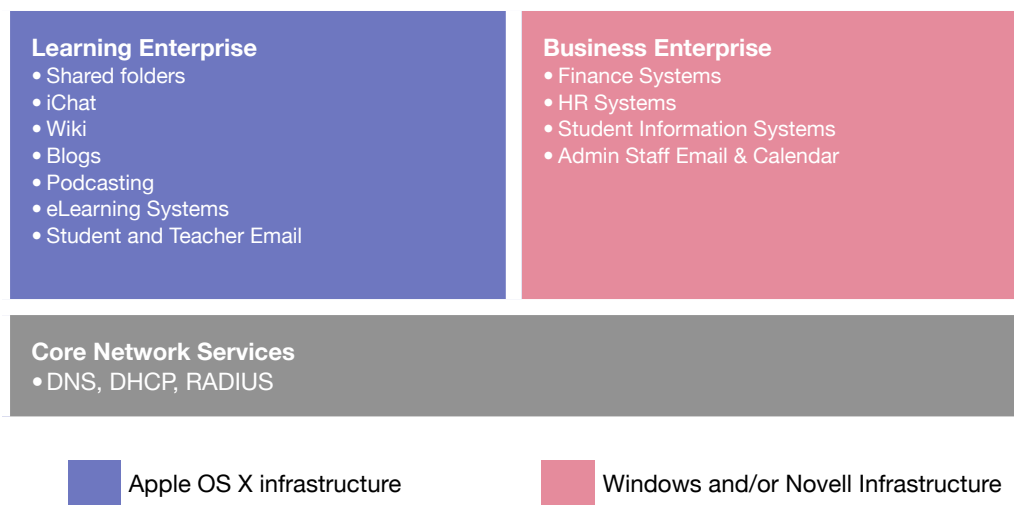
The following diagram shows the current architecture of Shanghai American's IT environment. It is a "monolithic architecture" which favors a business environment.

Diagram B: Current Architecture



The following diagram represents a fundamentally new way at looking at your school's IT environment. It shows a partition between "learning enterprise" and the "business enterprise" where the education goals aren't crippled by the rigidity of a business systems environment.

Diagram C: Proposed Architecture



5.2 Functionality

End User Functionality

The proposed infrastructure will allow users to enjoy the following features/benefits using Mac OS X-based systems on the SAS network:

- Offline use of client computers (Macs) without interruption
- Background synchronization of client laptops with network-based storage which facilitates easy backup and restoration of user's data
- Access to Novell and Mac network services including shared folders
- Ability to provide groups of users with access-controlled collaborative workspaces, wikis and weblogs
- Ability to connect to a local chat server (PC and Mac) that prohibits traffic from existing the school's private network
- Ability to provide web publishing space for individual users and groups
- Ability to stream large media files over the Internet and internally using QuickTime Streaming Server
- Caching of Mac OS X and Apple-written application software updates on the local network to maximize download speed and reduce burden on the WAN connection
- Ability to provide individuals and groups of users with online calendars
- Consistent username and password for both Mac and PC systems everywhere in the school
- Storage services for home directory and backup that integrate directly with other services, such as QuickTime Streaming Server, and provide roaming profiles
- Optional: Students and teachers will have access to email via client software or through the web.

Administrator Functionality

Administrators and IT staff will use the infrastructure in the following ways:

- Easy management of user information and passwords through a single database
- Ability to quarantine and deploy software updates from Apple
- Ability to push software and maintenance scripts to any Mac on the network
- Ability to control specific client preferences from a centralized location
- 1-button system restoration

5.3 Novell Integration

We recognize that SAS has an existing investment in Novell-based servers and storage and is currently being used to run business and education functions. In this proposal, we will be outlining ways of partitioning services on OS X and Novell in ways that business functions (which require Novell/Windows) will continue to run on Novell/Windows while education services will be handled by OS X-based servers and storage. This model is highlighted by the fact that existing student-utilized Windows PCs will be using the OSX infrastructure and storage. Only back-office business functions (and optionally mail) will use the existing Novell/Windows server infrastructure.

Each of these functional domains (business and education) of the school will still be able to access each other but in some circumstances, it may require that some users exist in both user databases - OpenDirectory for Apple users and ActiveDirectory for Windows users.

Email services currently provided by the Novel GroupWise server can be run in parallel to OS X email services. We recommend that teachers and possibly students be moved to OS X server's email services or use "cloud" email services such as Google. And because O X does not have a per-seat pricing model, an unlimited number of email accounts can be hosted on OS X servers.

5.4 Core Network Services

All networks require basic "core" functions. OS X Server supports these functions with standards-based, open source, yet easy-to-manage, services. These include:

- DNS
- DHCP
- RADIUS / Wireless authentication protocols

While these are currently provided by a combination of Windows, Linux and Cisco devices, we offer an option in this proposal to use OS X to provide these services. This consolidation of the core services would enable the Administrators to have a unified views into logs and a single administration interface.

5.5 Hardware

Overview

SolutionKeys proposes the use of its standard 1U rack-mountable Xserve server with additional RAM and hard drive capacity. Xserves were designed with the philosophy that only a few, similar services live together on a relatively inexpensive server. Then, as the breadth and/or scale of services is required, you add additional servers.

From a security standpoint, spreading services across multiple servers will dramatically minimize the risk of a single server outage causing major interruptions. For one, only a

small number of services will be affected and two, it is relatively easy to find another server to temporarily host the services of a failed Xserve.

Xserve

An Intel Xeon-based server, the Xserve provides up to 2.25 TB of storage, 32 GB of memory and up to eight 64-bit cores in a single 1U enclosure. Xserve includes swappable hard drives, supports all major RAID configurations, and includes powerful monitoring and management tools that are unparalleled on other server platforms.

Promise RAID

Among the most affordable storage solutions available today, this powerful 3U enclosure provides up to 12 TB of fiber-channel connected storage. Xserve RAID is differentiated by its unique management tools. Running on PC and Mac administrative workstations, IT staff can manage and monitor all aspects of the Promise RAID remotely. Additionally, the system is completely hot-swap capable, enabling simple scale out without interruption to existing storage services.

Apple Drive Modules

SolutionKeys propose a number of hard drives for systems, including high RPM drives to support maximum performance of high i/o applications. The high RPM drives minimize access times, and in mirrored configurations, increase throughput and provide redundancy for data protection.

RAM

Xserve uses only ECC data protection and high-bandwidth FB-DIMM memory, ensuring high performance and maximum overall reliability. Please note that the RAM proposed by the reseller will be third-party RAM that complies with Apple's specifications.

Please see attached data-sheets for Xserve and Promise RAID.

5.6 Hardware Recommendation

For Shanghai American School, we are suggesting the following hardware & software configurations to provide the services for a self-sustaining "21st Century Learning" environment. Because the following services are built upon open, standards-compliant technologies, BOTH Macs and PCs will be able to utilize them.

Three Options

SolutionKeys is providing three (3) options in this proposal. The first option provides a significant upgrade to the current infrastructure and will provide two to three years of stable infrastructure without the complexity of adding new servers and moving services in order to scale. The second is also designed for a long-term scalability yet lacks a few options. The third is a bare-minimum infrastructure which will require incremental scaling.

SolutionKeys fully endorses each of these configurations and will provide comprehensive technical and project management support in the deployment of these systems. SolutionKeys will also work with SAS staff to ensure that they can sufficiently support any of these infrastructures.

Option 1: Learning Enterprise + Core Services

We recommended the following hardware & software configurations to provide the IT management services to support the use of all Macs and PCs in the Shanghai American School's learning environment.

It includes basic network services such as DHCP, DNS and mail services which can otherwise be provided by other systems but shared by all network devices - PCs, Macs, and handheld devices. This also includes rich services to build curriculum around with technologies such as: Podcast Producer and wiki service.

Puxi Campus

Xserve 1: OpenDirectory Master

Single 2.8Ghz QuadCore Xeon (4-core), 2GB RAM, 2x80 GB SATA in RAID 1

- OpenDirectory Master
- Secondary DNS

Xserve 2a: Puxi OpenDirectory Replica + Network Services

Single 2.8Ghz QuadCore (4-core) Xeon, 2GB RAM, 2x80 GB SATA in RAID 1

- OpenDirectory Replica
- Primary DNS
- DHCP
- Secondary VPN

Xserve 3a: Puxi Client Management

Two 2.8Ghz QuadCore (8-core) ,6GB RAM, 2x73 GB SAS (15K RPM) in RAID 1, Bay 3 module with 500GB SATA

- Software Update Server
- Apple Remote Desktop Task Server
- AFP for disk image / restore
- Primary VPN

Xserve 4a: Collaboration * (already owned by SAS)

Two 2.8Ghz QuadCore (8-core) Xeon, 8 GB RAM, 2x300 GB SAS (15K RPM) in RAID 1, Bay 3 module with 750GB SATA

- Wiki Service
- Calendar Service

Xserve 5a: Puxi Staff Homes

Two 2.8Ghz QuadCore (8-core) Xeon, 4GB RAM, 2x80 GB SATA in RAID 1, Fiber Channel Card

- AFP File Services
- SMB File Services

Xserve 6a: Puxi Student Homes* (already owned by SAS)

Two 2.8Ghz QuadCore (8-core) Xeon, 8GB RAM, 2x80 GB SATA in RAID 1, Fiber Channel Card

- AFP File Services
- SMB File Services

Promise RAID 1a: Puxi Student and Staff Home Storage

12 TB (16 x 750)

- Left bank attached to the Puxi Student Homes Server

- Right bank attached to the Puxi Staff Homes Server

Xserve 7a: Puxi Share for Folders, Backup, iChat

Two 2.8Ghz QuadCore (8-core) Xeon, 8GB RAM, 2x80 GB SATA in RAID 1, Fiber Channel Card

- Backup services (will run after hours to prevent contention with user-services)
- Group folders
- iChat

Apple RAID 2a: Backup and Group Folders* (already owned by SAS)

7 TB (14 x 5000)

- Attached to "Xserve 7: Share for Folders, Backup, iChat"

Xserve 8a: Puxi Teacher Mail Store

Two 2.8Ghz QuadCore (8-core) Xeon, 8 GB RAM, 2x300 GB SAS (15K RPM) in RAID 1

- IMAP
- POP
- Webmail Services

Xserve 9a: Puxi Web Publishing

One 2.8Ghz QuadCore (4-core) Xeon, 4GB RAM, 2x80 GB SATA in RAID 1, Fiber Channel Card

- WWW Service
- MySQL

Mac Pro 1a: Puxi Helpdesk Imaging Station

Two 2.8Ghz QuadCore (8-core) ,8GB RAM, 750GB HD, 21' Cinema Display

- NetBoot for disk image restore
- AFP for disk image / restore

Pudong Campus

Xserve 1b: Pudong OpenDirectory Replica + Network Services

Single 2.8Ghz QuadCore (4-core) Xeon, 2GB RAM, 2x80 GB SATA in RAID 1

- OpenDirectory Replica
- Primary DNS
- DHCP
- Secondary VPN

Xserve 2b: Pudong Client Management

Two 2.8Ghz QuadCore (8-core) ,6GB RAM, 2x73 GB SAS (15K RPM) in RAID 1, Bay 3 module with 500GB SATA

- Software Update Server
- Apple Remote Desktop Task Server
- AFP for disk image / restore
- Primary VPN

Xserve 3b: Pudong Collaboration

Two 2.8Ghz QuadCore (8-core) Xeon, 8 GB RAM, 2x300 GB SAS (15K RPM) in RAID 1, Bay 3 module with 750GB SATA

- Wiki Service
- Calendar Service

Xserve 4b: Puxi Staff Homes

Two 2.8Ghz QuadCore (8-core) Xeon, 4GB RAM, 2x80 GB SATA in RAID 1, Fiber Channel Card

- AFP File Services
- SMB File Services

Xserve 5b: Pudong Student Homes* (already owned by SAS)

Two 2.8Ghz QuadCore (8-core) Xeon, 8GB RAM, 2x80 GB SATA in RAID 1, Fiber Channel Card

- AFP File Services
- SMB File Services

Promise RAID 1b: Pudong Student and Staff Home Storage

12 TB (16 x 750)

- Left attached to the Pudong Student Homes Server
- Right attached to the Pudong Staff Homes Server

Xserve 6b: Pudong Share for Folders, Backup, iChat

Two 2.8Ghz QuadCore (8-core) Xeon, 8GB RAM, 2x80 GB SATA in RAID 1, Fiber Channel Card

- Backup services (will run after hours to prevent contention with user-services)
- Group folders
- iChat

Promise RAID 2b: Backup and Group Folders

14 TB (14 x 1000)

- Attached to "Xserve 6: Share for Folders, Backup, iChat"

Xserve 7b: Pudong Web Publishing

One 2.8Ghz QuadCore (4-core) Xeon, 4GB RAM, 2x80 GB SATA in RAID 1, Fiber Channel Card

- WWW Service
- MySQL

Xserve 8b: Pudong Teacher Mail Store

Two 2.8Ghz QuadCore (8-core) Xeon, 8 GB RAM, 2x300 GB SAS (15K RPM) in RAID 1

- IMAP
- POP
- Webmail Services

Mac Pro 2: Pudong Helpdesk Imaging Station

Two 2.8Ghz QuadCore (8-core) ,8GB RAM, 750GB HD, 21' Cinema Display

- NetBoot for disk image restore
- AFP for disk image / restore
- Apple Remote Desktop Client application

Option 2: Learning Enterprise w/o Mail & Core services

The following assumes that core services such as DHCP, DNS, and/or VPN will be provided by other means and that student and staff mail hosting will be provided by other means such as existing internal mail and/or Gmail. This configuration provides a robust amount of storage for laptop folder synchronization, backup, and shared folder services.

Puxi Campus

Xserve 1: OpenDirectory Master

Single 2.8Ghz QuadCore Xeon (4-core), 2GB RAM, 2x80 GB SATA in RAID 1

- OpenDirectory Master
- Secondary DNS

Xserve 2a: Puxi Client Management

Two 2.8Ghz QuadCore (8-core) ,6GB RAM, 2x73 GB SAS (15K RPM) in RAID 1, Bay 3 module with 500GB SATA

- OpenDirectory Replica
- Software Update Server
- Apple Remote Desktop Task Server
- AFP for disk image / restore
- Primary VPN

Xserve 3a: Collaboration * (already owned by SAS)

Two 2.8Ghz QuadCore (8-core) Xeon, 8 GB RAM, 2x300 GB SAS (15K RPM) in RAID 1, Bay 3 module with 750GB SATA

- Wiki Service
- Calendar Service

Xserve 4a: Puxi Staff Homes

Two 2.8Ghz QuadCore (8-core) Xeon, 4GB RAM, 2x80 GB SATA in RAID 1, Fiber Channel Card

- AFP File Services
- SMB File Services

Xserve 5a: Puxi Student Homes* (already owned by SAS)

Two 2.8Ghz QuadCore (8-core) Xeon, 8GB RAM, 2x80 GB SATA in RAID 1, Fiber Channel Card

- AFP File Services
- SMB File Services

Promise RAID 1a: Puxi Student and Staff Home Storage

12 TB (16 x 750)

- Left bank attached to the Puxi Student Homes Server
- Right bank attached to the Puxi Staff Homes Server

Xserve 6a: Puxi Share for Folders, Backup, iChat

Two 2.8Ghz QuadCore (8-core) Xeon, 8GB RAM, 2x80 GB SATA in RAID 1, Fiber Channel Card

- Backup services (will run after hours to prevent contention with user-services)
- Group folders
- iChat

Apple RAID 2a: Backup and Group Folders* (already owned by SAS)

7 TB (14 x 5000)

- Attached to "Xserve 7: Share for Folders, Backup, iChat"

Xserve 6a: Puxi Web Publishing

One 2.8Ghz QuadCore (4-core) Xeon, 4GB RAM, 2x80 GB SATA in RAID 1, Fiber Channel Card

- WWW Service
- MySQL

Mac Pro 1a: Puxi Helpdesk Imaging Station

Two 2.8Ghz QuadCore (8-core), 8GB RAM, 750GB HD, 21" Cinema Display

- NetBoot for disk image restore
- AFP for disk image / restore

Pudong Campus**Xserve 1b: Pudong Client Management**

Two 2.8Ghz QuadCore (8-core), 6GB RAM, 2x73 GB SAS (15K RPM) in RAID 1, Bay 3 module with 500GB SATA

- OpenDirectory Replica
- Software Update Server
- Apple Remote Desktop Task Server
- AFP for disk image / restore
- Primary VPN

Xserve 2b: Pudong Collaboration

Two 2.8Ghz QuadCore (8-core) Xeon, 8 GB RAM, 2x300 GB SAS (15K RPM) in RAID 1, Bay 3 module with 750GB SATA

- Wiki Service
- Calendar Service

Xserve 3b: Puxi Staff Homes

Two 2.8Ghz QuadCore (8-core) Xeon, 4GB RAM, 2x80 GB SATA in RAID 1, Fiber Channel Card

- AFP File Services
- SMB File Services

Xserve 4b: Pudong Student Homes* (already owned by SAS)

Two 2.8Ghz QuadCore (8-core) Xeon, 8GB RAM, 2x80 GB SATA in RAID 1, Fiber Channel Card

- AFP File Services
- SMB File Services

Promise RAID 1b: Pudong Student and Staff Home Storage

12 TB (16 x 750)

- Left attached to the Pudong Student Homes Server
- Right attached to the Pudong Staff Homes Server

Xserve 5b: Pudong Share for Folders, Backup, iChat

Two 2.8Ghz QuadCore (8-core) Xeon, 8GB RAM, 2x80 GB SATA in RAID 1, Fiber Channel Card

- Backup services (will run after hours to prevent contention with user-services)
- Group folders

- iChat

Promise RAID 2b: Backup and Group Folders

14 TB (14 x 1000)

- Attached to "Xserve 6: Share for Folders, Backup, iChat"

Xserve 6b: Pudong Web Publishing

One 2.8Ghz QuadCore (4-core) Xeon, 4GB RAM, 2x80 GB SATA in RAID 1, Fiber Channel Card

- WWW Service
- MySQL

Mac Pro 2: Pudong Helpdesk Imaging Station

Two 2.8Ghz QuadCore (8-core) ,8GB RAM, 750GB HD, 21' Cinema Display

- NetBoot for disk image restore
- AFP for disk image / restore
- Apple Remote Desktop Client application

Option 3: Minimum 1:1 Support (1 year)

While the previous options infer a stable environment for 2-3 years (under normal circumstances), the following will only have an effective life-span of about 1 year before an additional purchase of storage and servers.

The problem with this option is that it requires higher skill levels of the IT staff to perform data migrations as the environment is scaled. It also assumes that **no consideration for network backup repositories & services will be provided.**

Puxi Campus

Xserve 1: OpenDirectory Master

Single 2.8Ghz QuadCore Xeon (4-core), 2GB RAM, 2x80 GB SATA in RAID 1

- OpenDirectory Master
- Secondary DNS

Xserve 2a: Puxi Client Management

Two 2.8Ghz QuadCore (8-core) ,6GB RAM, 2x73 GB SAS (15K RPM) in RAID 1, Bay 3 module with 500GB SATA

- OpenDirectory Replica
- Software Update Server
- Apple Remote Desktop Task Server
- AFP for disk image / restore
- Primary VPN

Xserve 3a: Collaboration * (already owned by SAS)

Two 2.8Ghz QuadCore (8-core) Xeon, 8 GB RAM, 2x300 GB SAS (15K RPM) in RAID 1, Bay 3 module with 750GB SATA

- Wiki Service
- Calendar Service

Xserve 4a: Puxi Staff Homes

Two 2.8Ghz QuadCore (8-core) Xeon, 4GB RAM, 2x80 GB SATA in RAID 1, Fiber Channel Card

- AFP File Services
- SMB File Services

Xserve 5a: Puxi Student Homes* (already owned by SAS)

Two 2.8Ghz QuadCore (8-core) Xeon, 8GB RAM, 2x80 GB SATA in RAID 1, Fiber Channel Card

- AFP File Services
- SMB File Services

Promise RAID 1a: Puxi Student and Staff Home Storage

12 TB (16 x 750)

- Left bank attached to the Puxi Student Homes Server
- Right bank attached to the Puxi Staff Homes Server

Mac Pro 1a: Puxi Helpdesk Imaging Station

Two 2.8Ghz QuadCore (8-core) ,8GB RAM, 750GB HD, 21' Cinema Display

- NetBoot for disk image restore
- AFP for disk image / restore

Pudong Campus

Xserve 1b: Pudong Client Management

Two 2.8Ghz QuadCore (8-core) ,6GB RAM, 2x73 GB SAS (15K RPM) in RAID 1, Bay 3 module with 500GB SATA

- OpenDirectory Replica
- Software Update Server
- Apple Remote Desktop Task Server
- AFP for disk image / restore
- Primary VPN

Xserve 2b: Puxi Staff Homes

Two 2.8Ghz QuadCore (8-core) Xeon, 4GB RAM, 2x80 GB SATA in RAID 1, Fiber Channel Card

- AFP File Services
- SMB File Services

Xserve 3b: Pudong Student Homes* (already owned by SAS)

Two 2.8Ghz QuadCore (8-core) Xeon, 8GB RAM, 2x80 GB SATA in RAID 1, Fiber Channel Card

- AFP File Services
- SMB File Services

Promise RAID 1b: Pudong Student and Staff Home Storage

12 TB (16 x 750)

- Left attached to the Pudong Student Homes Server
- Right attached to the Pudong Staff Homes Server

Mac Pro 2: Pudong Helpdesk Imaging Station

Two 2.8Ghz QuadCore (8-core) ,8GB RAM, 750GB HD, 21' Cinema Display

- NetBoot for disk image restore
- AFP for disk image / restore
- Apple Remote Desktop Client application

5.7 Additional Software Requirements

Web Help Desk

Web Help Desk (<http://www.webhelpdesk.com>) is a third-party solution that provides a web-based help desk solution for managing help request, asset management and building FAQ knowledge base.

- 100% web-based solution for easy access via web browser on any platform. No applets, flash or other plug-ins are required.
- Web Help Desk is powered by a database back-end with the support for FrontBase (provided), Microsoft SQL Server, MySQL, PostgreSQL, Oracle and OpenBase.
- Easy-to-use interface for submitting help requests

- Asset management for tracking hardware status and information.
- Create FAQ knowledge base to facilitate self-support users with a searchable database of common requests and their resolutions.

Apple Remote Desktop

Apple Remote Desktop is the best way to manage the Mac computers on your network. Distribute software, provide real-time online help to end users, create detailed software and hardware reports, and automate routine management tasks — all without leaving your desk. Advanced features includes Automator actions, Remote Spotlight search, and a Dashboard widget.

Software Distribution

Remote Desktop turns distribution of documents, files and entire software packages into a single-click operation by letting you install software programs and applications, and perform updates on an unlimited number of Macs in you network simultaneously. The administrator only needs to work on his own computer.

Software distribution also works for laptop computers. The Autoinstall feature lets the administrator stage software for systems that are offline. Once the system is back on the network, the software is automatically copied and installed.

Asset Management

Remote Desktop lets the administrator quickly query remote systems for statistics on their software versions, hardware configurations, operating system statistics, user statistics, and more. It will then assemble these statistics into a table or spreadsheet file for easy collation.

Remote Desktop can instantly generate reports about systems on the network including the following data categories:

- | | |
|----------------------------|------------------------------|
| • Remote Spotlight Search | • File Search Report |
| • Software Version Report | • Software Difference Report |
| • Application Usage Report | • User History Report |
| • System Overview Report | • Storage Report |
| • Network Interface Report | • PCI Card Report |
| • Memory Report | • USB Device RReport |
| • FireWire Devices Report | • Network Performance Report |

For a deployment as large as that of Shanghai American School, these features of Apple Remote Desktop can save the admin staff hours of work each week.

Remote Assistance

Technical support staff can use Apple Remote Desktop to observe or take control of a computer screen from afar. If teachers or students are in another building, or even another country, and need assistance, a technical support member can instantly see their screen, help them navigate menus, and quickly resolve problems. Technical support staff can drag and drop items from their own desktop to the desktop of the remote user. And the staff can monitor the status of hardware in labs, server rooms and other locations remotely without interfering with the operation of the remote system.

Remote Administration

Apple Remote Desktop enables system administrators to apply complex scripts and setting changes to systems from afar. It includes more than a dozen commands you can use to control remote systems easily. You can shut down all systems simultaneously, put to sleep, wake up, or restart any or all computers — all without leaving your desk.

Apple Remote Desktop also provides the ability to remotely designate the startup disk for your client Macs. Set any number of Macs to start up from a NetBoot image or their local hard drives. Administrators will find this to be an indispensable feature for managing computer labs with multiple configurations.

Print Control Management

Print solutions are complex to implement and require integration with user databases, hardware devices at the printers, user-carried identification devices (such as RFID cards), and user education. Nonetheless, a well-implemented print management system can reduce waste, increase efficiency of the printing infrastructure, and reduce headaches for IT staff and users alike.

The current leader in cross-platform print management is Equitrac. This product supports secure release printing and roaming for both Macs and PCs.

Because the server software component of this solution is the simplest part, Shanghai American School will need to work with a printing systems provider separately. Lanxum (marty@lanxum.com) is a leading provider of the Equitrac solution in Asia, and has extensive experience working with International Schools in the region.

Library System

Follett's **Destiny** solution is a very popular web-based library management system. It runs on both Windows and Linux and integrates seamlessly with Apple's Open Directory for authentication.

Software Asset Management

To remain within software licensing compliance yet provide many users with access to sometimes expensive software applications, there are technology solutions which let users "borrow" the license for a limited time and return it for other users to use. Key Server / Key Auditor from Sassafras Software, Inc. (<http://www.sassafras.com>) is the recommended choice for cross-platform software asset/key management.

Clients can be either Mac OS X or Windows. Policies can be set around each license which allows the administrator to, for example, allow an application key to only be checked out for 3 days.

Video Streaming Server

QuickTime Streaming Server will enable users to publish media files to the Internet without forcing people viewing that media to download large files. Users will be able to upload movies and audio to the server and share it out instantly over the web.

QuickTime Streaming Server has a number of benefits to school environments, especially when compared to similar features in Microsoft's and Real's proprietary solutions. These include,

- The streaming client, QuickTime Player, is fully supported in its latest versions on both Mac OS X and Windows
- QuickTime Streaming Server is free and included with the server operating system without client license fees or other limitations

- Unlike any other streaming server, QTSS is able to stream standards-based, cross-platform media, such as MPEG 4, without compromising the features and functionality of the client
- Ability to provide instant access to any point in a media file without buffering or delay via RTSP
- Direct integration with Mac OS X Server-based storage deployments using Xserve RAID, eliminating the need to manually place media files onto a separate server
- Auto-configuration across firewalls, stepping down to more frequently used port numbers to compensate for restrictive remote client network conditions

Podcast Server

Mac OS X Server has capabilities for publishing and syndicating weblogs and podcasts. The built-in, web-based weblog service works with Open Directory to provide automatic account creation and subsequent authentication to users. It requires virtually no work to maintain and is compatible with any major web browser.

It's extremely easy for end-users to manage their podcasts. They simply log-in, upload content, then share the link with people who want to subscribe. The link to the podcast will automatically launch a subscriber's iTunes and add the podcast. A subscriber simply opens iTunes to receive the latest updates. For example, a teacher can use the podcast server to distribute learning materials in the form of PDFs, enhanced podcasts (like slideshows), basic audio files and video files.

In addition to its built-in podcasting capabilities, Mac OS X Server provides robust web-hosting capabilities which can be leveraged to host podcasts created by iWeb and/or content-management systems such as Drupal and others.

Final Cut Server

Shanghai American School has already engaged in preliminary conversation about setting up a Final Cut Server infrastructure. SolutionKeys will continue to work with the IT staff to further define requirements and provide solutions in this area.

6. Warranty and Support

For one-to-one laptop schools, support is incredibly important. When the technology stops, the learning stops—and that's not acceptable. The following support program by SolutionKeys promises the highest standards in support for the Shanghai American School mobile technologies deployment.

6.1 Standard First-Year Warranty Coverage

Apple provides standard limited global warranty coverage to computers within their first year of purchase subject to the standard terms and conditions of the Apple Warranty. The costs of labor and Apple genuine parts are included. Carry-in repair service is provided for the full range Macintosh computers including desktop, portable and server grade machines during the warranty period. Customers can bring their computers for servicing to any of Apple's Authorized Service Centers worldwide and are automatically guaranteed service free of charge within the terms of the warranty. As SolutionKeys's on-site Apple certified engineer will be present on each campus of the school, "carry-in" simply means bringing the computer to the school's help-desk right on campus.

This first year of warranty coverage is free of charge, and is global in scope. Any Macintosh purchased through Apple Authorized Reseller can be taken to any Apple authorized Service Center worldwide for repair in the first 12 months from invoice date.

90 days telephone technical support service is provided from the computer's purchase date. Customers can get technical consultation on Apple's hardware and application software including iLife and iWork during the period of 9:00 a.m. to 9:00 p.m. Monday to Friday and 9:00 a.m. to 6:00 p.m. on Saturday. For further details, please see the appendices for detailed terms and conditions for Apple's One (1) Year Limited Warranty.

6.2 SolutionKeys's Extended Services and Support

SolutionKeys propose an extended period of services and support for all Macintosh systems purchased under this proposal. With deployments of this scale, Shanghai American School benefits from substantial economies of scale, making a full suite of extended support particularly affordable. SolutionKeys, as Apple's authorised reseller, has customized this support package through the AppleCare Repair Agreement (ARA) for Shanghai American School as detailed in the following sections. The customized service and support solution extends the complimentary first year of global coverage of Apple desktops and laptops to a total of 36 months for each computer from its respective purchase date.

Extended Hardware Maintenance

All costs of labor and Apple genuine parts are included. The program is worldwide in scope, which means that students and teachers have the options to bring their machines to either the Apple Authorized Service Center on campus or any other Apple Authorized Service Centers in the world during the warranty period.

Battery Replacement Program

Because Shanghai American School will provide a wireless learning environment, the MacBook batteries will be frequently charging and discharging as users plug in and unplug their systems through the day. This will shorten the usable life span of the battery. SolutionKeys therefore proposes the extension of the MacBook battery maintenance coverage from the first year warranty to a total a total of 36 months for each computer from its respective purchase date. The battery will be repaired or replaced free of charge if it fails or prematurely depletes during the three-year coverage period.

As an alternative, the school can instead stock spare batteries on-site for users. The costs of these approaches are similar, but the model is different. Under the battery replacement program, the school or student pays “up front” for the service, which can then be used at any point during the 3 year life span of the computer. When batteries are stocked, the school is able to buy batteries at any time as needed, which leaves more money in the users’ pockets until the new battery is required.

6.3 Server Technical Support

Support of Xserve is extended to the Premium Service and Support Plan with 7 x 24 round-the-clock phone support from skilled support technicians. Professional-level support for Apple’s server products also provides unlimited access to these telephone resources during the three-year period.

A local Apple Service Provider will also guarantee four-hour on-site response for the covered Xserves as well as fast availability of spare parts and hot-swap of critical servers, such as Open Directory masters and file servers.

For complete details on this program, please refer to the Terms & Conditions of the AppleCare Repair Agreement and AppleCare Premium Service and Support Plan, included in the appendix.

6.4 On-site Certified Service Engineer and Apple Authorized Service Center

SolutionKeys recommends one on-site Apple Certified Engineer* on each of Shanghai American Schools campuses. These engineers will handle hardware repair and technical support issues of all on-site Macintosh computers covered by the customized ARA.

**Note: Subject to terms and conditions, If and when a total of 500 units of Mac with valid Custom Bid ARA coverage has been purchased, SolutionKeys will place the Certified Engineer on-site to meet the demand of service required. Prior to reaching the 500 unit threshold, , SolutionKeys will provide free on-site or pick-up service but without the certified engineer on-site . The Engineer on-site placement will be continued as long as the number of unit under active Apple's Custom Bid ARA install base remains above 500.*

Certified Apple Engineer Service Scope

The Apple Certified Engineer will diagnose and repair any system covered under warranty. The on-site service center will also stock spare parts to expedite the repair processes of common systems, such as student MacBooks.

Our on-site engineer will report to work at Shanghai American School during normal work days with 8 hours daily, excluding an one-hour lunch break. The on-site engineer will work from 9:00 a.m. to 5:00 p.m. to operate the service center. The engineer will not be expected to work on Saturdays, Sundays or public holidays. Our Engineer will lead a staff of other individuals, provided by Shanghai American School, if desired. This can lead to substantial knowledge transfer to the staff of Shanghai American School at no cost.

The SolutionKeys on-site certified engineer will provide, at a minimum, the following services:

- Immediate response and technical problem solving for Macintosh computers, including systems that are property of the school, and those that are the property of students
- Hardware repair or software configuration for portables at the in-house service center
- Front-end technical support and consultancy to users
- Management of laptop battery charging services and on-site loaner services
- Management of all in-house service parts ordering, logistics and replacement

Required Work Space for On-site Apple Certified Engineer

In order for the on-site engineer to meet the demands of Shanghai American School efficiently, SolutionKeys requires the school to provide a dedicated venue of approximately 300 square feet with sufficient power and an Internet connection for setting up each of the in-house service center. In addition, Shanghai American School

must assign at least one IT support staff to assist our engineer for technical troubleshooting as necessary on each campus. Two support staff for each site is preferred, and can undergo Apple's certification training over the summer.

The service center venue provided by Shanghai American School must provide sufficient security, given the value of the stored equipment on-site. Shanghai American School must take theft liability and/or insurance for Apple's service parts and equipment inside the building(s).

6.5 Battery Charging

As an option, 3rd-party battery charging bay is available. Most can simultaneously charge MacBook and MacBook Pro batteries. SolutionKeys recommends that the at least one charging dock be placed in the on-site service center for the convenience of teachers and students.

Alternative Option

In addition to offering charging services at the help desk, Shanghai American School may also opt to provide MagSafe™ power bricks throughout the school in convenient locations to students. This would entail plugging standalone power bricks into power outlets and fastening them to locations like tables and sofas in public areas where students often spend time.

In this way, students can easily plug in anywhere in the school without lugging their power brick everywhere they go. While the cost of this option is not included in the enclosed proposal, should the school desire such a setup, we will provide complimentary installation and discounted access to the hardware required to do so.

6.6 AppleCare Help Desk Support

AppleCare Help Desk Support provides two designated contacts one year of unlimited support incidents for software installation, launch, and use; hardware and software diagnosis and troubleshooting; and issue isolation for Apple-based solutions. AppleCare Help Desk Support also provides graphical user interface-level assistance with Mac OS X Server as well as support for Final Cut Studio, Aperture, Apple Remote Desktop, Final Cut Express, iLife, iWork, Logic Express, Logic Pro, QuickTime Pro, and Shake.



6.7 AppleCare Help Desk Tools

AppleCare Help Desk Tools provides a single user with a library of Mac OS installation and hardware diagnostic discs that is updated quarterly for the duration of the contracted period. AppleCare Help Desk Tools also provides access to Apple's professional online support resources, including online updates of the latest tools and software patches, and prompt email notification of Apple technical issues.



6.8 Loaner Units

SolutionKeys will provide loaner units to Shanghai American School for use in the event of system failures, particularly for MacBook systems used by students and faculty. Systems will be loaned for the duration of the repair. Additionally, we will reserve spare parts like batteries, keyboards and mouse for loan-based use. The availability of loaner units will depend on stock availability, and may not exactly match the specifications of those systems being replaced.

6.9 Software Refresh Program

For school owned computers only, we have included a software refresh program for three key components of this proposal: Mac OS X, iLife '08 and iWork '08. The Apple Maintenance Program for Mac OS X, iLife '08 and iWork '08 have been included to provide all upgrades, free of charge, for these applications included in these suites for the duration of the covered three-year period. Thus, the latest versions of the following applications will be provided to Shanghai American School immediately upon their commercial availability, regardless of their list price:

-
- | | |
|-------------|--------------|
| • Mac OS X | • GarageBand |
| • iPhoto | • iTunes |
| • iMovie HD | • Pages |
| • iDVD | • Keynote |
| • iWeb | • Numbers |
-

Any new applications that are announced as part of the iLife '08 suite or iWork '08 will be covered under the terms of the agreement, and provided to Shanghai American School at no additional charge.

Mac OS X, iLife '08 and iWork '08 applications are covered for a 36 month period for all school-owned hardware.

Software Deployment

With so many software titles covered under this agreement, we will also provide guidance in the technical management of software deployment. Apple Remote Desktop, coupled with the Software Update Server in Mac OS X Server, will make deployment of new versions manageable, and will put the IT managers in control of the deployment cycle.

6.10 AppleCare Program Recommendation

SolutionKeys recommends that Shanghai American School adopt the following components of AppleCare:

- Three-year Apple Repair Agreement for all systems owned by students and staff
- On-site help desk provided by SolutionKeys
- Two on-site service centers on both Puxi and Pudong campuses
- School owned loaner units
- School-owned battery bay and spare batteries
- AppleCare Premium Service and Support for all Xserve units

6.11 Software Refresh Program

SolutionKeys recommends Shanghai American School include Mac OS X software maintenance with each school purchase to guard against problems associated with future software upgrades. At the approximate price of one copy of the operating system this gives 36 months of coverage.

7. Professional Development

Equipping teachers at Shanghai American School with a best-in-class learning infrastructure is step one; training them to use the platform is an equally important second step. Without the skills to integrate technology into the learning process—and see technology and learning from the *learner's* perspective—teachers cannot fully realize the potential of Apple's learning solutions.

To that end, SolutionKeys believes that it is critical for Shanghai American School to engage in an ongoing professional development relationship to educate and continually upgrade the faculty of the school. Apple's stratified professional development programs and opportunities provide a plethora of implementation options. As such, a more in-depth study is required to finalize such a plan. However, some suggestions are made in this section to guide the thought process.

7.1 Technology Briefing for Staff and Faculty

Basic technology training modules are available to faculty and staff where they would acquire a set of fundamental knowledge that would enable them to understand what the device is capable of doing, and propagate this knowledge within the Shanghai American School community. This basic briefing is composed of 3 modules, Mac OS X Basics, iLife, and iWork, and each module is approximately 3 hours long. Some modules may last up to 6 hours if delivered in context or a more experience-based training is desired.

Module I. Mac OS X Out-of-the-Box

This course gives an overview of basic operations and customization of Mac OS X, covers fundamentals of Internet and networking and other useful features of Mac OS X.

A Mac OS X Basics course typically includes an agenda like the following:

- Introduction to the Mac OS X desktop
- Working with Disks, Folders, Files, Icons
- Introduction to Spotlight and Dashboard
- Organizing your files in Mac OS X
- System preferences configuration
- Internet and networking
- Mail and Internet browsing with Safari
- Other useful functions like iChat, screen capture, image capture, etc.
- Customizing your Mac

Module II. iLife '08 In-Depth

The iLife '08 training course is designed for teachers to learn all software modules of iLife '08 including iMovie HD, iPhoto, iTunes, iDVD, iWeb and GarageBand. Each class is approximately 6 hours long.

The training would cover many facets of each application, including the following:

iTunes	iPhoto
<ul style="list-style-type: none">- Managing your music with iTunes- Getting music into iTunes- Exporting audio from iTunes	<ul style="list-style-type: none">- Working with your photos- Editing your photos- Creating iPhoto slideshows- Sharing your photos with others
iMovie	iDVD
<ul style="list-style-type: none">- Basic iMovie HD concepts- Building movies- Transitions and effects- Titles, captions and credits- Narration, music and sound- Movie sharing directly to YouTube or .Mac	<ul style="list-style-type: none">- Bringing iMovie projects into iDVD- Creating professional DVDs- Advanced iDVD features
GarageBand	iWeb
<ul style="list-style-type: none">- Basic GarageBand concepts- Introduction to loops- Recording and editing live audio- Podcasting with GarageBand	<ul style="list-style-type: none">- The iWeb interface- Creating basic sites- Publishing blogs and podcasts- Publishing to .Mac

Module III. Working with iWork '08

The iWork '08 training course is designed to help teachers learn the main features of the two modules of iWork '08—Pages, Keynote and Numbers—for use in their day-to-day administrative and teaching responsibilities. Each class is approximately 3 hours long and will include the following topics:

Pages	Keynote
<ul style="list-style-type: none">- Overview of Pages- Creating a basic document- Formatting documents- Advanced word processing- Building tables and charts- Sharing Pages documents	<ul style="list-style-type: none">- Overview of Keynote- Creating a Keynote presentation- Slide layout concepts- Charts, graphs and graphics- Advanced slideshow features- Sharing your presentations
Numbers	
<ul style="list-style-type: none">- Overview of Numbers- Creating spreadsheets, tables- Customizable templates & table styles	<ul style="list-style-type: none">- Compatibility with Microsoft Excel

7.2 Professional Development Services

Upon gaining basic competency in Mac OS X and its native applications, we recommend Shanghai American School implement Apple's professional development program to further enhance the use of technology in the classroom.

Apple's professional development staff members are current or former administrators, teachers and IT coordinators. They are uniquely qualified to work with school staff on technology development programs through their experience not only as technology experts, but as educational experts. All hold Apple Certified Professional Development Consultant status which requires extensive training, coaching and examinations, as well as annual recertification.

Apple's faculty and administrator development programs are organized into three "strands," which can be designed according to the needs of Shanghai American School. Details of each strand is outlined below, and can be delivered in the format of hands-on briefing, small group workshops, one-on-one consultation, or in-class mentoring.

1. Digital Literacy Strand



The digital literacy strand of Apple's professional development offerings focuses on the fundamentals of how to use various software applications to enhance teaching and learning:

Apple Applications	3rd-Party Applications
iPod and iTunes (1)	Kidspiration (1)
iPhoto & Photo Booth (1)	Inspiration (1)
iMovie (2)	NoteTaker (2)
Garageband (1)	Comic Life (1)
Podcasting (2/4)	Microsoft Office (2)
iWeb (1)	Dreamweaver (2)
iDVD (1)	StudyWiz (2)
iWork (2)	FileMaker Pro (2)
Final Cut Express HD (2)	
Final Cut Pro 5 (6-8)	
Soundtrack Pro (2)	
Motion (6-8)	
Aperture (6)	
Lesson Development – initial planning of first lessons using the above applications (1)	
Intro to Accessibility	
Information Literacy (1)	

Digital literacy modules are typically three hours or multiples that result in full day sessions. Modules can be mixed and matched to design your own one, two or multiple day workshops. SolutionKeys recommends "lesson development" as one of the three-hour modules. In this module educators have time to explore powerful resources for "just-in-time" learning, and build initial lessons for their classroom that use their digital literacy training.

2. Technology Infused Learning Strand



The Technology Infused Learning strand is for teachers who understand the fundamentals of how to use Apple's hardware and software. This strand helps teachers identify ideas and strategies to infuse the application into the learning process. These 2-day workshops combine technology and emerging models of teaching and learning to transform education. Participants explore exemplary integration lessons, discuss ways to build rigor and relevance into the curriculum, investigate assessment strategies, how to leverage resources from the Apple Digital School Community, and how to develop a lesson for use in their classroom that supports student learning and integrates 21st century skills.

Communication and Collaboration with Web Tools

During the Communication and Collaboration with Web Tools workshop, educators will explore Web 2.0 applications, such as blogs, wikis, and chat, which enhance collaborative learning experiences and lessons and management of digital, social, learning environments in the classroom. Through the use of Web 2.0 tools, participants will create a classroom wiki to use with their students for communication, collaboration, and reflection on relevant topics.

Designing Technology Infused Units and Lessons

The Designing Technology Infused Units and Lessons workshop explores research-based models of exemplary lesson development, emphasizing appropriate technology infusion techniques and skills. Practical and easy "how-to" techniques are demonstrated with model lessons. Participants share their own lessons, suggest improvements, and leave with multiple ideas and models for technology infused lessons.

Designing 21st Century Curricula

The Designing 21st Century Curricula workshop explores the nature of today's learning environments and best practices in the creation of digital learning curricula. Participants will design a model curriculum that is not only relevant, engaging, and meaningful but that also incorporates the rigor necessary to prepare students to be competitive in the 21st century through such topics as global awareness, civic literacy, health and wellness awareness, and financial, economic, business, and entrepreneurial literacy.

Differentiated Instruction

The Differentiated Instruction workshop focuses on a variety of easily-implemented strategies for differentiating content, process, and products with 21st century technology infusion. Participants will use iLife and iWork tools with a variety of exemplary strategies for scaffolding instruction and assessment to build and deliver superior standards-based curricula.

Digital Storytelling

In the Digital Storytelling workshop, participants address the elements of digital storytelling while immersing themselves in a hands-on experience to

write, script, storyboard, film, edit, and produce an original short movie. Techniques for managing digital storytelling projects in the classroom with iMovie and through the Media Browser content from iPhoto and iTunes will be explored.

Documentary Filmmaking

The Documentary Filmmaking workshop provides participants with the opportunity to explore the complex lives and achievements of people and analyze provocative issues, both of which are associated with the genre of documentary films. Participants learn to write their own script, record, edit, produce, and publish an original documentary film with iMovie.

Language Acquisition and iPod

The Language Acquisition and iPod workshop demonstrates how an iPod can be used to assist struggling readers, to help students with learning new languages for enrichment, and to strengthen students' overall language acquisition. Participants will learn to use iPod devices and the iTunes application for creating digital student portfolios that demonstrate longitudinal growth.

Mobile Content and iPod Touch

The Mobile Content and iPod touch workshop demonstrates how iPod touch can be used to improve student learning both in the classroom and "on the go." During this workshop, participants will explore the built-in, third-party, and web applications readily available for iPod touch. Participants will also work collaboratively to define ways iPod touch can be used in their own classrooms to help improve academic achievement.

Podcasting in Your Classroom

The Podcasting in Your Classroom workshop presents the podcasting fundamentals of planning, creating, and managing digital media files. Participants learn to write their own script, and record, edit, produce, and publish their own enhanced podcast. Throughout the workshop, participants discuss the role of podcasting in education and how to utilize the power of the ubiquitous media players (iPod) as a teaching and learning tool to engage learners with diverse learning styles.

Project Based Learning

The Project Based Learning workshop provides participants with pedagogical foundations, professional skills, and knowledge to develop engaging student-focused effective projects using digital resources. Workshop participants work collaboratively to develop an authentic, standards-based curriculum project that incorporates essential questions anchored in real-world situations and cognitive tools for facilitating higher order thinking skills, and that uses digital and technology resources.

3. Leadership and Management Strand



Administrators and other leaders within the school, including faculty members designated as “thought leaders,” benefit from a higher-level view of the activities of the school’s teaching and learning efforts. How does one evaluate the success of new teaching models? How does one create mutual accountability between faculty and students?

Leadership strands typically incorporate extended 6-day workshops administered over summer breaks or other break periods, or incrementally over a period of months. Apple’s education marketing will work with Shanghai American School to evaluate how this strand should be incorporated into the academic calendar when appropriate.

Visioning and Planning for 21st Century Learning Environments

The Visioning and Planning for 21st Century Learning Environments workshop supports leadership personnel in their awareness of the full potential of 21st century tools and their impact on teaching and learning. Participants collaboratively engage in developing a shared vision for their schools and creating an action plan that will help move their students and faculty toward increasing 21st century technology and thinking skills.

Technology and Curriculum Infusion Strategies

The Technology and Curriculum Infusion Strategies workshop explores the support educators need to address the challenges of successful infusion of technology across the curriculum. Participants examine the influence of factors such as timetabling, curricula development, ongoing teacher professional development, instructional technology support, and assessment and evaluation strategies within a 21st century curriculum. Participants will also investigate new technology standards for students and teachers as established by ISTE and the Partnership for 21st Century Skills.

Managing Change and Accountability

The Managing Change and Accountability workshop will investigate the theories of school change, change management practices, and monitoring strategies through the use of technology resources. Participants will also investigate capacity building and sustainability strategies for a technology initiative in their school. Accountability measures such as rubric assessment of pedagogical practice, technology standards for teachers, technology standards for students, and teacher supervision and evaluation practices will be explored and applied to the identified initiative. Participants may create rubrics to measure effective technology uses and action plans that emphasize capacity building and sustainability.

Series and Institutes

21st Century Leadership and Classroom Series

The Apple Professional Development Series offers both Shanghai American School an opportunity to develop a set of skills over a semester or year. The Leadership Series and Classroom Series each focus on building capacity and continuous improvement and may be six days, eight days, or longer, delivered in two-day increments. The 21st Century Leadership and Classroom Series is ideal for schools and districts that are implementing innovative technology initiatives and for building teams to support them.

21st Century Skills Institute

The Apple Professional Development Institute provides an immersion experience for participants to explore identified 21st century skill sets or topics. This four consecutive day program offers a concentrated experience, allowing rapid development of skills and projects in a supported environment. Examples: Podcasting in Your Classroom, iLife '08, Special Education: Reaching All Learners, and Documentary Filmmaking.

7.3 Measuring Success

Teacher Technology Profile

As a prerequisite to the delivery Apple Professional Development, SolutionKeys suggest Shanghai American School conduct teacher profiles in collaboration with Apple to assess and evaluate the current state of technology use by teachers at Shanghai American School. Apple Professional Development works best when it is designed around the needs of teachers. The Apple Teacher Technology Profile (TTP) is designed to gather information on the technological skill and competence of the school or educators, and to use the information as the basis for a comprehensive professional development plan.

The TTP survey instrument is grounded in more than a decade of research, as well as three decades of experience integrating technology into schools. The TTP measures teachers' technological skill levels along six dimensions of application to the classroom: curriculum, teaching, communication, media, productivity, and information. Teachers complete an online survey that takes 15 minutes on average. In addition to asking questions about their skills and applications of technology, the survey also gathers information about their classroom environment, obstacles to development, and preferred modes for professional development.

The TTP results in a report to school or district leadership that details the current status of its teachers and compares them with a national average. The report also presents a professional development plan based on its findings.

The steps to administration are:

1. Planning and setup.
2. Administration of the survey.
3. Comprehensive report.

4. Professional development discussion.

5. Professional development plan.

An Apple Professional Development consultant will work with Shanghai American School's leadership on every step of the TTP, from initial setup to delivery, and then discussion of the results and the creation of a professional development plan.

Evaluation and Assessment Toolkit

Evaluation and assessment programs are designed to help schools and districts evaluate the progress of their 1 to 1 learning programs. The evaluation provides useful and timely data on the progress of the initiative. It guides the school in gathering information and artifacts to tell a compelling story about the progress of its 1 to 1 learning program, and also provides useful information to direct the initiative along the way.

This toolkit has been developed by researchers at SRI in keeping with the principles of rigorously designed research.

The Progress Evaluation Toolkit includes:

- Guidelines for Organizing and Reporting on District Data
- Student, Teacher, and Parent Surveys
- Classroom Walk-Through Protocol
- 1 to 1 Learning Program Portfolio

The Guidelines for Organizing and Reporting on School Data provide a framework for thinking about data already being collected by a school or district and how it can be analyzed to show the progress of a 1 to 1 learning program. The guidelines also outline what a school or an entire school group can do to track activities known to have significant effects on the success of 1 to 1 learning programs, such as teacher professional development experiences related to the program.

The student, teacher, and parent surveys facilitate the gathering of self-report information.

The Classroom Walk-Through Protocol allows for useful observations to be made in classrooms implementing a 1 to 1 learning program.

The 1 to 1 Learning Program Portfolio assists the school or district personnel with selecting and collecting interesting and informative artifacts to help tell the story of their initiative.

SolutionKeys recommends a 2-day leadership session for up to 16 participants to help schools implement the Evaluation and Assessment Toolkit.

7.4 Student Briefing Sessions

Student briefing sessions are more focused on the specifics of the Mac platform, the details of the applications, tips and tricks for using their systems more effectively, and most importantly, how to take care of their new learning tool. Students will also learn about the many “lifestyle” features of the systems; this further encourages the integration of the software and hardware into their day-to-day lives, which reinforces the “always on” learning style that Apple hardware and software support as part of the digital classroom.

SolutionKeys, offers orientation sessions to the students in the relevant grade levels, once for each group, to Shanghai American School as part of its proposal. We would recommend that these sessions be mandatory for all students at the time of student laptop deployment.

Sessions would be conducted at the school after MacBooks had been distributed to students, and would emphasize the basic skills students will need to be self-sufficient with their systems. Sessions would also point out the many resources students have within the school, as well as outside the school, to become experts in using the learning platform.

Student Support Program

SolutionKeys can offer entry-level Mac OS X and software support briefings to a small group of capable students as recommended by the Shanghai American School leadership. The goal of the program is to alleviate some of the day-to-day task from the IT staff, as well as cultivate young advocates to help maximize the use of the new technology among teachers and students. Upon completing the basic training, students will act as mentor for their fellow students and teachers in the use of Macs for education.

7.5 Technical Training and Certification for IT Staff

In order to develop internal technical support capabilities, and to assist the in-house engineer in his or her technical support duties, SolutionKeys recommends that Shanghai American School assign at least two technical staff to be trained as Apple Certified Engineers (ACEs) for handling any Apple technical support issues, and that they be capable of conducting repairs on current-model Macintosh computers. To achieve the ACE certification, participants must take several Apple courses, outlined in the subsections of this section of the proposal, and pass the examinations for those courses.

Mac OS X Support Essentials Training

Mac OS Support Essentials is a three-day hands-on course that provides an intense and in-depth exploration of troubleshooting on Mac OS. The course is designed to give the technical staff of Shanghai American School a tour of the breadth of functionality of Mac

OS and the best methods for effectively troubleshooting issues that commonly arise.

The course outline includes:

- Mac OS installation process, common user issues and installation troubleshooting techniques
- Creating user accounts for multiple users on Mac OS and troubleshooting common account problems
- The Mac OS file system, including formatting disk drives, file system layout, and file management
- The users, groups and permissions model
- The differences among native, BSD, Java, and Classic applications running on Mac OS
- Using the Terminal application to run BSD commands to accomplish simple administration tasks
- Configuring Mac OS workstations for networking, as well as troubleshooting common networking issues
- Using Mac OS to access network services, including file, mail and web servers as well as basic directory services; understanding common issues when accessing networking services
- Using Mac OS to provide network services. Sharing files using AFP, SMB, FTP, and HTTP. Securing services using the Mac OS firewall
- How peripherals are supported in Mac OS, with emphasis on USB, FireWire, and Bluetooth buses
- Configuring and troubleshooting printing on Mac OS
- Troubleshooting the different stages of the Mac OS startup sequence
- Using the troubleshooting flowchart and the various resources and practices to troubleshoot workstation problems.
- Using the skills learned in the course to troubleshoot specific equipment requirements on a computer “broken” by the instructor

A course material booklet will be given to trainees for use in their day-to-day work as a reference.

We recommend that the trainees take a Mac OS Support Essentials exam after finishing the training course. The certificate of ACHDS verifies a foundation in Mac OS X features and use and an ability to configure key services, perform basic troubleshooting and assist teachers and students with essential Mac OS X capabilities. Certification also presents a concrete professional development opportunity for the employees of Shanghai American School.

Mac OS X Server Essential Training

Mac OS X Server Essentials is a four-day, hands-on course that provides technical coordinators and entry-level system administrators with the skills, tools, and knowledge to implement and maintain a Mac OS X Server-based system. The technical staff at Shanghai American School will learn how to install and configure Mac OS X Server to

provide network-based services, such as file sharing, email, and printing. Tools for efficiently managing a group of Macintosh clients is also covered.

The course outline is shown below:

- Installation, initial configuration, server administration tools and troubleshooting installation issues
- Configuring and troubleshooting DHCP, DNS, and Software Update services
- Gateway Setup Assistant, configuring and troubleshooting Firewalls, NAT, and VPN
- Creating and administering accounts, configuring Access Control Lists (ACLs) and troubleshooting
- Configuring Open Directory, single sign-on, backing up directory data, troubleshooting Open Directory
- Introduction to Kerberos
- Configuring and managing the print service and troubleshooting print service issues
- Configuring and troubleshooting Apple File Service, share points for Windows users, NFS, network mounts and FTP, case sensitivity issues
- Managed accounts, preference management, managed network browsing, mobile accounts, troubleshooting account management
- Deployment issues, configuring and troubleshooting NetBoot / Network Install, creating and delivering custom packages, deploying and updating with Apple Remote Desktop

A course material booklet would be given to trainees for use in their day-to-day work as a reference. We recommend that the trainees take the Mac OS X Server Essentials exam after completing the training course.

Apple Certified Desktop Technician Training (ACDT)

The ACDT is a three-day, in-depth training program covering the spectrum of knowledge a technical staff member needs to become an Apple-certified technician for repairing Macintosh desktop computers. Attendees learn the essential skills for troubleshooting Macintosh hardware and operating systems. The course outline is shown below:

- | | |
|---|-----------------------------------|
| • Reference Materials | • Basic Computer Theory and Terms |
| • Software Tools introduction | • Underlying Technologies |
| • General Troubleshooting | • Power Management |
| • Theory for Apple Desktop computers | • Liquid Crystal Displays |
| • Safe Working Procedures and General Maintenance | • Cathode-Ray Tubes |
| • Hardware Tools introduction | • Wireless Networking |
| | • Network Troubleshooting |

We recommend the trainees take the ACDT exam after finishing the training course to become certified Apple engineers for Apple desktop computers.

Apple Certified Portable Technician Training (ACPT)

The ACPT is also a three-day, in-depth training program covering the spectrum of knowledge technical staff members need to become an Apple-certified technician for repairing MacBooks. However, when taken in conjunction with the ACDT training (above), the combined course is five days, rather than six.

The course will be given by an Apple certified trainer.. The course content is similar in nature to the ACDT Training, with an emphasis on MacBook (and MacBook Pro) computers.

SolutionKeys recommends the trainees take the ACPT exam after completing the course to become certified Apple engineers for Macintosh laptop computers.

7.6 Professional Application Certification

As Shanghai American School prides itself in developing creativity and innovation in its staff and students, the school may consider making use of Apple's professional applications in a broader context. Apple's Pro Apps training courses target aspiring editors, composers, special effects artists, sound designers, film directors, web developers, and professional photographers, and are designed to expand students' knowledge and skills, and help them gain a competitive edge in using these industry-standard tools in their schoolwork.

Apple offers a tiered certification program for Apple's professional digital applications from "Power User" to "Train the Trainer". The supporting curriculum applies to creative professionals, digital media teachers, and students in varying capacities. Both Chinese and English language training are available through our Apple Authorized Training Centers (AATCs), and can be customized for delivery either at the center or at the school. Courses cover all the Apple professional digital applications including Final Cut Pro, DVD Studio Pro, Motion, Color, Logic Pro, Shake, Soundtrack Pro, and Aperture.

For more information and for course schedules, please visit our AATCs in China.

- Zhong Ji Central Media: <http://www.a-training-center.com/login.asp>

- Sine Media: <http://www.sinemedia.com/>

7.7 Online Component

SolutionKeys highly recommends an ongoing professional development program that incorporates online components. Using these online resources, such as streaming video seminars, podcasts, text and other media, faculty members can access knowledge on an as-needed basis from anywhere, anytime. This low-cost model cannot replace face-to-face learning opportunities, but it has been shown to successfully supplement and enhance the learning process, particularly with respect to knowledge retention.

The Apple Learning Interchange www.ali.apple.com

The Apple Learning Interchange (ALI) is a social network for educators, containing a wealth of free content ranging from simple lesson ideas to in-depth curriculum units developed by Apple Distinguished Educators. Any teachers will be able to search for an ideal lesson plan by grade level, subject area, curriculum requirement, or specific Apple's technology. The ALI is also a new channel for showcasing projects, research and interact with fellow digital educators.

The Apple Media Series

Teachers and students can now access the just-in-time, self-paced tutorial series for iLife and iWork. The Apple Media Series includes engaging how-to videos and step-by-step guides for teachers and students to maximize the productivity tools that comes with every Macs. Practicing a product's features with the included media helps build skills quickly and enables success when integrating into curriculum and learning projects. The Apple Media Series can be hosted on a school network or installed on individual computers in the school.

7.8 Financial Considerations

The most successful laptop deployment programs set aside a percentage of the total budget for professional development. For example, some schools say that 20% of all monetary allocations to hardware, software, support and services will be reserved for professional development activities. This often leads to a robust support framework for the administrators and faculty in the first year of laptop operation. Note that all training/programs as described herein this Section 7 are subject to additional charges and to terms and conditions.

8. Deployment of the Laptop Program

SolutionKeys will assist Shanghai American School in its deployment of the laptop program infrastructure. This service includes technical consultation with technical staff to assist in the work of installation and configuration, and other assistance with laborious or technically challenging tasks.

8.1 Deployment Services and Management

SolutionKeys, as Apple's authorised reseller, will draw on Apple's worldwide resources and experience to project manage many aspects of the deployment, and to ensure that the project plan is reasonable and achievable. As the scale of the deployment at Shanghai American School is significantly larger than most 1:1 deployments, SolutionKeys will allocate extended resources to the school. This will include an additional engineer from SolutionKeys on each campus during the initial deployment phase of 4 weeks to support the designated Certified Engineer and IT staff at Shanghai American School.

Laptop and Desktop Deployment

SolutionKeys's Apple Certified Engineer will provide consultative assistance to the Shanghai American School technical team, and facilitate the installation of all Macintosh desktop and portable computers at Shanghai American School. (Involvement of the Shanghai American School staff is critical for knowledge transfer.) The services include the following:

- Unpack system components and perform visual equipment inspection
- Install Apple-branded internal components such as memory, batteries and drive modules to the Apple computers, as necessary
- Install any appropriate software onto the systems
- Manage the imaging process of all systems
- Plug in power and Ethernet cables for desktop systems, as necessary
- Power-up verification of system functionality
- Network configuration, user account configuration and other usability prerequisites

System images will be created for each model of computer (iMac, MacBook, etc.) and tested thoroughly. Upon successful testing of each system image, deployment will take place over the school's network using Apple's NetInstall technologies and Xserve.

Image Management

The most critical component of deployment success is comprehensive preparation and testing of drive images for each of the systems. Separate images for each group will need to be confirmed and tested by both Shanghai American School internal staff and SolutionKeys before mass deployment to client computers.

The IT staff of Shanghai American School will need to determine and implement usage policies for the appropriate security, login, and broader configuration. Timely and coordinated definition of such policies will be crucial to on-time deployment of systems. Once defined and tested, SolutionKeys will assist Shanghai American School with Apple's unique image deployment tools to accelerate the process of image deployment across the computing infrastructure.

Server Deployment and Configuration

SolutionKeys will be able to deliver onsite installation services of all Macintosh servers at Shanghai American School by Certified Apple Engineers with assistance from the technical staff of Shanghai American School.

- Unpack system components and perform a visual equipment inspection
- Install any additional Apple-branded internal server components such as RAM, drive modules and expansion cards
- Install Xserve systems into standard 19-inch four-post server racks (provided by the school)
- Attach all required cabling
- Standard power-up verification
- Partition disks and configure software and/or hardware RAID arrays
- Install Mac OS X Server with latest operating system and security updates
- Configure administrative accounts and IP network settings
- Configure Open Directory for "standalone" operation
- Verify IP network connection
- Demonstrate user and group account creation (up to 5 users and 2 groups) to ensure self-sufficiency
- Demonstrate configuration of AFP and other file services
- Verify file service availability to Mac OS X client systems over the local network

Software Deployment

With so many software titles covered under this agreement, SolutionKeys will also provide guidance in the technical management of software deployment. Apple Remote Desktop, coupled with the Software Update Server in Mac OS X Server, will make deployment of new versions manageable, and will assist the school IT manager in control of the deployment cycle.

8.2 Estimated Timeline

A more concrete timeline will be determined upon the selection of the preferred vendor for Shanghai American School's ICT deployment.

Date	Milestone	Action by
Sep 15, 2008	Proposal submission	SolutionKeys
Oct 15, 2008	SolutionKeys to be selected as the vendor for ICT deployment	SolutionKeys & Shanghai American School
Nov 15, 2008	Finalize 1st phase school purchase list	Shanghai American School
Nov 25, 2008	School order placed by SolutionKeys	SolutionKeys
1 Dec 2008	Teacher 2008 and administrator laptop, school system imaging defined	To be defined by Shanghai American School
12 Dec 2008	Laptop program first mentioned to parents	Shanghai American School
15 Dec 2008	School desktop and laptop system delivered	SolutionKeys
19 Dec 2008	SAS term finishes	Shanghai American School
1 Jan 2009	Master 2008 image created and tested for teachers laptops and school systems	SolutionKeys & Shanghai American School
5 Jan 2009	SAS term starts	Shanghai American School
5 Jan 2009	Teacher machines asset tagging and imaging begins for teacher machines and school systems	SolutionKeys & Shanghai American School
12 Jan 2009	System imaging begins for teacher laptops and school systems	SolutionKeys & Shanghai American School
12 Jan 2009	Xserve and RAID delivered	SolutionKeys
13 Jan 2009	First phase of backend setup begins: - Server settings for teacher machines - User name/password for all systems - System testing and burn-in	SolutionKeys & Shanghai American School
19 Jan 2009	School systems deployed into the classroom and testing	SolutionKeys & Shanghai American School
30 Jan 2009	First phase of server set up complete	SolutionKeys & Shanghai American School
4 Feb 2009 (or after Chinese New Year)	Phase 1 teacher laptops distributed to teachers and ADE technology briefing for teachers starts	SolutionKeys, ADEs, and Shanghai American School
22 Mar 2009	SAS term finishes	Shanghai American School

23 Mar 2009	Student holiday image defined and work started to create them	SolutionKeys & Shanghai American School
3 Apr 2009	Summer student image finished	SolutionKeys & Shanghai American School
7 Apr 2009	Pricing and more details on laptop program sent to parents	SolutionKeys & Shanghai American School
13 Apr 2009	Student ordering starts	SolutionKeys & Shanghai American School
30 Apr 2009	Student ordering finished	SolutionKeys & Shanghai American School
4 May 2009	Student order placed with Apple	SolutionKeys
25 May 2009	Student computers arrive	SolutionKeys
26 May 2009	Student computers imaged	SolutionKeys & Shanghai American School
8 Jun 2009	Students computers distributed	SolutionKeys & Shanghai American School
11 Jun 2009	SAS school year finishes	Shanghai American School
12 Jun 2009	Potential laptop training day for teachers	
15 Jun 2009	Finalize 2nd phase school purchase list	Shanghai American School
16 Jun 2009	School order placed by SolutionKeys	SolutionKeys
16 Jun 2009	Teacher 2009-10 laptop, school system and student 2009-10 laptop imaging defined	To be defined by Shanghai American School
6 Jul 2009	School desktop and laptop system delivered	SolutionKeys
6 Jul 2009	Master 2009-10 image created for teachers and student laptops and school systems	SolutionKeys & Shanghai American School
20 Jul 2009	Xserve and RAID delivered	SolutionKeys
20 Jul 2009	Second phase backend setup begins: - Server settings for student 1:1 - User name/password for all systems - System testing and burn-in	SolutionKeys & Shanghai American School
30 Jul 2009	School systems deployed into the classroom and tested	SolutionKeys & Shanghai American School
Jul 23, 2009	Student laptop system imaging & asset tagging begins	SolutionKeys & Shanghai American School
7 Aug 2009	Phase 2 Teacher laptop distributed and teacher briefing begins	SolutionKeys, ADE & Shanghai American School
7 Aug 2009	Second new student order collected and placed by SolutionKeys	SolutionKeys

28 Aug 2009	Student computers arrive and imaged	Shanghai American School and SolutionKeys
31 Aug 2009	New student laptops distributed to parents and students, and students tech briefing	SolutionKeys & Shanghai American School
Oct 10, 2009	Apple Professional Development program	APD consultants & Shanghai American School

9. A Win-Win Partnership

With the opportunity to work with Shanghai American School, SolutionKeys looks forward to deepening a relationship with the school by committing itself to the success of the laptop program. This partnership is the very epitome of a “win-win” situation.

While many computer manufacturers will promise the sky in partnership, only SolutionKeys, as Apple’s authorised reseller, has the ability to provide value beyond the scope of computers and software. Through this partnership, which includes Apple’s rich experience in computing in education, we hope to benefit both Apple and the broader community at Shanghai American School through this complementary partnership.

For Shanghai American School:

- Progressive exploration of new approaches to teaching and learning with Apple’s experienced and expanding staff of education professionals in China, Asia, Europe, and the United States, through SolutionKeys;
- Ongoing access to Apple’s rich set of resources and network of schools in Asia and beyond through SolutionKeys;
- Access to the world’s largest and best community of technology-skilled educators through SolutionKeys;
- The ability to market the success of Shanghai American Schools through Apple’s broad marketing reach;
- A high level of support from not only SolutionKeys, as Apple’s authorised reseller, but also its many partners and affiliates;
- Access to the ever-growing community of Apple-partnered schools within the China and around Asia;
- Favorable pricing arrangements.

For Apple and SolutionKeys:

- A compelling reference site for Apple to use when working with other potential customers in the form of site visits, online profiles of the school’s success, public relations (media) outreach activities, and other related resources;
- Reinforce Apple’s leadership position in education with an additional major partner school in China;
- Higher visibility within the Asian international school community;
- Opportunities for Apple’s and SolutionKey’s permanent technical staff to gain additional hands-on management and deployment experience through servicing Shanghai American School;
- Positive exposure to the community through parents, teachers and administrators.

9.1 Mutual Promotion

SolutionKeys proposes that Shanghai American School, upon completion of deployment, and upon completing a period of successful education using Apple's technology platform, become one of only a handful of "lighthouse" schools in Asia. Apple may thereafter refer to Shanghai American School in its marketing of education-related products to other potential customers.

Reference Account Activities

Shanghai American School would be asked, from time to time, to host other customers onsite for a tour of the facilities, exposure to the pedagogy used in the school, and other such activities. Shanghai American School may also be featured on Apple's corporate website, may be referenced at major education-related conferences, such as NECC (USA) and BETT (United Kingdom), IBAP, EARCOS, and at many individual seminars and events, as appropriate.

Studies into the Impact of Digital Learning

After the successful completion of at least one year of integrated technology-based learning, Apple may approach Shanghai American School to conduct quantifiable research into the impact of digital teaching and learning on student achievement. The likely result of such a project would be the generation of a white paper, web site or other content to show the concrete benefits of the use of digital technologies—and, in particular, Apple's technologies—with respect to student achievement.

Invitations to Participate in Education Events

From time to time, Apple may seek the participation of certain staff members (teachers, administrators or other staff members) from Shanghai American School in local, regional or international education seminars, events, webcasts or other communication opportunities. Appropriate invitees will be determined in cooperation with Shanghai American School, and individuals, of course, retain the right of refusal to participate.

High profile speaking opportunities would be among the most valuable ways for Apple and Shanghai American School to share their respective visions for, and mutual success in, primary and secondary educational endeavors.

9.2 Community Relations

SolutionKeys, as Apple's authorised reseller, is committed to the satisfaction of all members of the Shanghai American School community. This includes students, teachers and administrators, as well as parents of students, their families and the broader community. SolutionKeys believes that a school in harmony with its surroundings is best able to conduct the business of education.

To that end, SolutionKeys, as Apple's authorised reseller, would support Shanghai American School by using commercially reasonable efforts to assist Shanghai American School in introducing this proposal to the community, communicating with the

community on an ongoing basis, and assisting in the development of an understanding and supportive community with respect to the technology goals of the school.

Company Representation at Events

Apple and/or SolutionKeys would make effort to send representation to public events held by Shanghai American School. Examples may include sending Apple employees and/or executives to large school events, to unique events relating to the technology use at Shanghai American School or to other milestones that bear relevance to the relationship.

Apple and SolutionKeys would also make effort to supply representatives for events that may entail direct interaction with the Shanghai American School community, especially where such events will entail the discussion of technology use at Shanghai American School, such as parent events.

Joint Development of Community Communication

SolutionKeys is prepared to engage directly with the leadership of Shanghai American School in the development of appropriate communication methods, messages and mechanisms with respect to the deployment of Apple's technology as part of the school's infrastructure. SolutionKeys's, as Apple's authorised reseller, will draw on Apple's experience in deploying its products to many hundreds of primary and secondary schools around the world to ensure the best-possible acceptance of the community to the school's plans.

Apple Distinguished Educator (ADE) Program

The ADE program is a relationship program focused on educational excellence and leadership. Apple Distinguished Educators are members of a select group of K-12 and Higher Education professionals possessing an identified expertise in educational technology leadership. This group of over 1200 educators spans the globe with membership in the USA, Canada, Europe, Australia, New Zealand, Japan, Latin America. Since 2006, we have built up a community of over 60 Apple Distinguished Educators in Asia. We would like to invite a small group of professionals from Shanghai American School to join the ranks of the ADE program.

The program lays out the following key objectives:

- Recognize educators who integrate technology into the curricula and their learning environments in meaningful ways.
- Enhance the professional development of these exemplary educators.
- Create a community of educators to exchange experiences, projects and ideas.
- Empower education advocates with knowledge of Apple technologies and solutions.
- Foster community based involvement with Apple via a direct relationship with our field employees and retail locations.

As an Apple Distinguished Educator, they will serve the following roles for their community:

Advocate

ADEs are passionate advocates for the potential of Apple technologies and they provide expert assistance and best practices to peers and policy-makers. ADEs are frequent presenters at local, state and national educational conferences.

Advisor

ADEs provide valuable input to Apple on the realities of integrating instructional technology into learning environments.

Author

ADEs publish authentic work on the Apple Learning Interchange (ALI), such as teaching and leadership best practices, exemplary lesson ideas, and a range of content items that showcase Apple solutions and technologies for the advancement of education.

Ambassador

ADEs are innovators in building community and capacity for teaching and learning in a global context. Through online projects and collaboration tools, they empower each other to expand the walls of the classroom and bring global experiences to classrooms everywhere.

The class of 2008 is now accepting applications, and we would like to invite Shanghai American School staff to apply. Joining the program would require participation in a mandatory annual summit. The class of 2008 ADE Institute is tentatively planned for Bangkok during the first week of December.

Requirements for membership include the following:

- Full-time classroom teacher or instructional leader
- Advanced user of core Apple technologies (Mac OS X, iLife, iWork, etc.)
- A "digital educator". Someone who fully functions in the digital world of communication and is actively integrating it into their teaching and lifestyle.
- A champion for the innovative uses of technology in an academic environment.
- A leader in implementations of effective professional development.
- Available and committed to engage with Apple on project-based teams and willing to travel and attend Apple or Educational Conference related events and activities.
- Committed to participate in ADE Institute 2008

SolutionKeys recommends Shanghai American School to directly engage in a conversation with Apple to determine the most appropriate personnel to join the program.

10. Apple's Experience in One-to-One Laptop Deployments

No company is as experienced as Apple in the deployment of one-to-one computing programs. SolutionKeys, as Apple's authorised reseller, is proud to outline the rich base of experience and energy Apple brings to the table in this proposal, and in the proposed relationship with Shanghai American School.

10.1 Key Strengths

SolutionKeys, as Apple's authorised reseller, is uniquely positioned to serve the needs of Shanghai American School in the following areas.

Product Leadership

First in the education markets of the United States and Europe by market share, Apple designs its core products with the education market in mind. In particular, MacBook and iMac are designed for use in educational environments, as evidenced in their durability, flexibility and cost effectiveness.

Education Experience

Apple has a rich 27-year history of working with educators. From the day the first Macintosh system was brought to market in 1984, Apple has had a philosophical interest in working with educators to enrich the learning process.

Today's discussion has progressed from "student to computer ratios" to the "impact of technology of learning." Apple has advocated this new value system in the education world. While Apple's competitors may be skilled at squeezing an extra dollar out of a piece of inexpensive hardware, Apple has developed skill in adding tangible education value to its products.

Above and beyond these unique products, Apple has invested in its people in the education space. After a decade of turning around challenged school systems in California, the leader of Apple's original Lisa systems group returned to Apple in 2001 at the request of its CEO, Steven P. Jobs, to head up Apple's Education division. As Vice President, John Couch has invested in Apple's staff to bring the brightest and most experienced educators to Apple's skilled team of professionals.

The quality of Apple's people is evidenced in the rich resources now available to educators from Apple. It's also evidenced in the massive success of the education group as it expands into new segments of education, and continues to push its vision for the digital classroom.

Thought Leadership

Apple continues to define the vernacular used by educators worldwide to discuss one-to-one computing initiatives. With a staff of experienced education professionals, Apple seeks to engage with its customers and partners to push the envelope of technology use in education. With the fundamental belief that educators have only scratched the surface of the potential presented by technology in education, Apple is committed to furthering the use of technology as a means to richer, more producing learning environments.

This general mindset translates into greater partnership opportunities between the Shanghai American School and Apple in furthering the respective goals of both partners.

10.2 Key Successes

Apple has hundreds of installed one-to-one learning initiatives worldwide, and hundreds more schools that are experimenting with Apple's Mobile Learning Labs to prove the value of digital classroom environments.

Large Deployments Example: The State of Maine

As an example of large-scale deployments, Apple points to the State of Maine's "Maine Learning Technology Initiative." Approved by the state government in pilot form five years ago, Apple was selected on March 21, 2006 to continue as the key vendor for this deployment of over 36,000 MacBook portables to all grade 7 and 8 (aged 12 and 13) students statewide.

From the State of Maine press release: "We are pleased with the strong educational focus of Apple's proposal, and we look forward to a continued partnership in providing the students of Maine the tools and resources for the 21st Century." (Bette Manchester, Director of Special Projects for the Department of Education)

Apple successfully deployed over 50,000 iBook computers in the state of Maine to date, and will provide laptops, wireless networks, training and services to the state under the new agreement.

For a study on the impact of this deployment, the State of Maine commissioned an external, independent entity. The results of the study showed dramatic improvement in the test scores of learners, which prompted the continued expansion of the initiative.

The studies are available directly from the Maine Department of Education at the following URL:

<http://www.maine.gov/mlti/resources/research.htm>

In one document, titled "The Impact of Maine's One-to-One Laptop Program on Middle School Teachers and Students," dated February 2004 and conducted by the Maine Education Policy Research Institute at the University of Maine, the executive summary concludes,

In summary, the evidence collected for this evaluation indicates that a large majority of Maine's middle schools have successfully implemented the one-to-one laptop program, and there is already substantial self-reported evidence that student learning has increased and improved.

Almost 90% of teachers believe that laptops enable them to "explore topics in greater depth" and over 70% believe that laptops enable them to "individualize [their] curriculum to fit students' needs." Perhaps most importantly, over 90% of teachers agreed that "students in [their] classroom are more actively engaged in their own learning when [teachers and students] use laptops."

As a result of Apple's success in Maine, the state of Alaska has now begun the process of implementing one-to-one learning in public schools in exclusive partnership with Apple.

Launch Date of Project: Summer 2005, and ongoing across the state

Scale of Project: Statewide infrastructure placed in central locations and on school sites to serve grades 6, 7 and 8. 32,000 laptops for students and over 4,000 laptops for teachers. Hundreds of servers. Professional development services (including train-the-trainer program) deployed across the state.

Clients of the Project: The State of Maine, United States

Concordia International School Shanghai www.ciss.com.cn

Concordia runs one of the longest-standing laptop programs in Asia with over 7 years of experience. The school has decided to switch their platform to Mac OS X, phasing in iMac desktops to replace Dell PCs, and recommending MacBook laptop systems to incoming students and existing students replacing their laptops. Apple was able to provide substantially lower pricing, and introduce a teacher training and professional development program at the school.

Launch Date of Project: Summer 2007

Scale of Project: Mac is now the preferred choice for students in their laptop program with around 150 students each year choosing to buy Mac. In 2007, Concordia switched the middle school over to Mac followed by the elementary school in 2008. Overall around 600 Macs at the school

Clients of the Project: Concordia International School

Dulwich College Shanghai and Suzhou www.dulwichcollege.cn

A respected school teaching the IB and UK National Curriculum, Dulwich moved to a one-to-one laptop program with Apple in the fall of 2007. They phased Mac systems into their PC infrastructure, and offered MacBooks to their student body as the platform of choice for their computing environment. They also has two Apple Professional Development Consultants come to the school to facilitate the integration of technology into their curriculum.

Dulwich College Suzhou, a new international school, has also adopted the Mac as their standard platform. Dulwich Beijing has recently started a trial with Apple after the success of the program at Dulwich Shanghai. Windsor Kindergarten in Beijing, under Dulwich Colleges China has also adopted Mac as its teaching technology.

Launch Date of Project: Summer 2007

Scale of Project: Complete back end infrastructure. One-to-one program from Grades 6 to 12 and also laptop carts in their elementary school. Approximately 700 machines

Clients of the Project: Dulwich College China

Renaissance College, Hong Kong

In the spring of 2006, Renaissance College, part of the English Schools Foundation in Hong Kong, decided to engage vendors in a bid process for a one-to-one computing environment. At the time, the only vendors being considered were HP and IBM. However, it was suggested that the ESF and the leadership at Renaissance consider Apple. They did, and worked with Apple through an in-depth consultative process that revealed their needs more clearly. In the process, they also realized that Apple's competitors in Hong Kong were unable to fulfill these needs.

To date, Renaissance College has deployed nearly 800 Macintosh desktops and laptops since. The installation expands this fall of 2007 with additional student laptops, expanded classroom use and increased network capacity with Apple's platform.

Apple is now engaging with Renaissance College to conduct public relations activities to share their success with the Hong Kong community through local and regional media outlets.

Launch Date of Project: Summer 2006

Scale of Project: Complete back-end infrastructure including servers and storage, all on-site services and project management, professional development and teacher/student training. Approximately 700 systems.

Clients of the Project: Renaissance College / English Schools Foundation

Canadian International School of Hong Kong

www.cdnis.edu.hk

The Canadian International School of Hong Kong began the deployment of the largest one-to-one laptop program in Hong Kong in December 2007. The school has been partnering with Apple for over 13 years building up to this launch, and Apple has been acting as the primary consultant on project management, infrastructure planning, policy implementation, technology infusion, and professional development. Apple has been integrally involved in the entire process, and will continue to assist with the deployment as the school moves forward to expand its laptop program from 5th to 13th grade, and a mobile cart program from 1st to 4th grade.

Launch Date of Project: December 2007

Scale of Project: Complete back-end infrastructure including servers and storage, all on-site services and project management, professional development and teacher/student training. Approximately 1300 systems in place.

Clients of the Project: Canadian International School

Additional Examples

Rather than citing a single additional example, we'd like to share a list of additional examples in Asia that may be of interest to Shanghai American School in your decision making process. SolutionKeys can provide additional information on any of these cases, as any would represent the abilities of (and momentum behind) Apple in education.

South Island International School

www.sis.edu.hk

South Island International School, part of the English School Foundation, has deployed its one-to-one computing program this fall from grade 7 to 12. Apple provided a full-service support program including external briefing, technical project management, hardware deployment, and staff training as they move forward. Apple has already been engaged with South Island School in professional development activities, providing certified professional development consultants from its pool of US experts.

Dulwich College Suzhou, a new international school, will also adopt the Mac as their standard platform.

Maris Stella High School, Singapore
<http://www.marisstellahigh.moe.edu.sg>

The Maris Stella School is a semi-private (“independent”) school tied to the ministry of education in Singapore with a funding and organizational structure similar to that of Shanghai American School. This fall, Maris Stella will deploy MacBooks into the hands of students as they launch their one-to-one computing program.

11. Financial Proposal and Acquisition

SolutionKeys is pleased to propose a substantial discount to students and teachers of Shanghai American School for laptops, software, and services in this proposal from its standard retail pricing. The proposal given in this document strives, however, to provide an excellent balance of capability and affordability.

Pricing estimates given below are based on a volume of around 2000 machines over a one year period as indicated by Shanghai American School. Pricing is for Apple's present line of products. Pricing for future products may change.

All prices in Chinese RMB.

11.1 Recommended Apple Hardware

User	Product Type	SRP	Offer to Shanghai American School
Teacher Laptop (Better Bundle)	MacBook 13.3/2.4/2x1GB/160/SD-DL White (MB403CH/A)	11498	9543
	Mini DVI to VGA adaptor	178	148
	On-site AppleCare Protection Plan for MacBook	Not offered	1300 (est.)
	3 year battery maintenance program	Not offered	1300 (est.)
	Mac OS X 36- months Maintenance	1968	848
Teacher Laptop (Digital Media User)	MacBook Pro 15" 2.4/2x1GB/200-5400/256VRAM-ITP (MB133CH/A)	17998	14578
	Mini DVI to VGA adaptor	178	148
	On-site AppleCare Protection Plan for MacBook Pro	Not offered	1950 (est.)
	Mac OS X 36- months Maintenance	1968	848
Student Laptop (Basic Bundle)	MacBook 13.3/2.1/2x512/120/Combo White (MB402CH/A)	9898	8215
	On-site AppleCare Protection Plan for MacBook	Not offered	1300 (est.)
	3 year battery maintenance program	Not offered	1300 (est.)
Student Laptop (Better Bundle)	MacBook 13.3/2.4/2x1GB/160/SD-DL White (MB403CH/A)	11498	9543
	On-site AppleCare Protection Plan for MacBook	Not offered	1300 (est.)
	3 year battery maintenance program		1300 (est.)
School Desktop (General Use)	iMac 20"/2.4/1GB RAM/250GB/SD-ITP (MB323ZP/A)	10698	8879
	On-site AppleCare Protection Plan for iMac	1640	1000 (est.)
	Mac OS X 36- months Maintenance	1968	848
School Desktop (Design/Video/Music)	MacPro 2.8GHz 8CX/2x1G/320/2600XT/SD-ITP (MA970ZP/A)	26998	21868
	Apple Cinema 20" display (M9177B/A)	5999	4859
	Apple Cinema 23" display (M9178B/A)	8998	7288
	Apple Cinema 30" display (M9179B/A)	17998	14578
	Mac OS X 36- months Maintenance	1968	848

Back-end	Xserve 2.8GHZ QX/2GB/80GM/Super (MA882FE/A)	27988	22670
	Promise VTrak E-Class 16 x SATA RAID subsystem (TQ820Z/A) - 12TB	129998	129998
	AppleCare Premium Service and Support Plan for Xserve	10700	8560

Pricing for AppleCare is estimated based on previous experience. More concrete pricing will be given before final purchase.

11.2 Optional Apple Software for Student and Teacher Laptops

The following list excludes software applications that are bundled with systems for free, such as iLife '08, iChat AV, and others mentioned in this proposal.

Product Description	Normal Price per unit	Offer to Shanghai American School (per unit)
iWork '08 - Edu Individual	849	430
iWork '08 - Edu Volume License - 1000+ licenses	549	119
iWork '08 - K-12 Institution Site License up to 500 users (on school own systems)	Not available	2298
iLife '08 - K-12 Institution Site License up to 500 users (on school own systems)	Not available	2298
Apple Remote Desktop - Unlimited	4988	3198

11.3 Other Apple Products

Product Description	Normal Price per unit	Offer to Shanghai American School per unit
Other Hardware Mac Mini 1.83/2x512/80/COMBO/AP/BT-ITP (MB138ZP/A)	5388	4472
Mac Mini 2.0/2x512/120/SD/AP/BT-ITP (MB139ZP/A)	7298	6057
iMac 20/2.66/2GB/320GB/SD-ITP (MB324ZP/A)	13398	11120
iMac 24/2.8/2GB/320GB/SD-ITP	15998	13278
MacBook Air 13/1.6/2GB/80GB-ITP(MB003ZP/A)	16988	14100
MacBook 13.3/2.4/2x1GB/250/SD-DL Black (MB404ZP/A)	13498	11203
MacBook Pro 15"/2.5/2x1GB/250-5400 (MB134ZP/A)	21998	17818
MacBook Pro 17"/2.5/2x1GB/250-5400 (MB166ZP/A)	24998	20248
Other Apple Software		

	Aperture 2.0 Edu Institution	1798	748
	Aperture 2.0 VLA 5+ Edu Inst	1298	628
	Final Cut Express Edu Institution	1998	748
	Final Cut Express vol 5+ Edu Inst	1598	648
	Final Cut Studio Edu Institution	13998	5688
	Final Cut Studio vol 5+ Edu Inst	12898	4499
	Logic Express Edu Institution	1998	748
	Logic Express vol 5+ Edu Inst	1598	648
	Logic Studio Edu Institution	5188	1598
	Logic Studio vol 5+ Edu Inst	4688	1398
	Apple Remote Desktop 3.2 Unlimited	4988	3198
	Mac OS X 10.5 Sever Unlimited Client Singles License	10268	5398
	Mac OS X 10.5 Sever Unlimited Client Singles License - 36 months maintenance program	10268	5199
Accessories	Airport Extreme Base Station	1398	1160
	Time Capsule 500GB	2498	2073
	Time Capsule 1T	4198	3484
	Apple Wireless Mighty Mouse	649	539
	Apple Wired Mighty Mouse	449	373
	Rechargeable Battery - 13" MacBook	1260	1046
	Rechargeable Battery - 15" MBPro	1260	1046
	85W Magsafe Power Adapter	770	639

Important: Prices and specifications contained herein are for informational purposes only and are subject to change at Apple and SolutionKeys's absolute discretion and without notice. Prices will not become binding until a final agreement is signed between the parties.

11.4 Individual Purchase

Parents and staff of Shanghai American School are eligible to directly purchase *one laptop* and *one desktop* of their choice at an aggressively discounted price directly through the school's purchase program. These products will be offered through our service center's on Shanghai American School's two campuses.